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# East Europe Report



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## DEVELOPMENT OF AGRICULTURAL WORK FORCE TRACED, TRENDS PROJECTED

Prague STATISTIKA in Czech No 5, 1986 pp 221-229

[Article by Dyna Tesarova: "Development of Manpower in Agriculture in Czechoslovakia and Changes in Its Qualification Structure During the 1980's"]

[Text] (Note: Data for this study were taken from the statistical balance of work (in which workers in agriculture are considered as those persons included in the count of workers employed by organizations in the state sector, permanently active (constant) workers in unified agricultural cooperatives (including affiliated production operations), and private farmers); other data resulted from the unique statistical investigations regarding the qualification of workers. Detailed numerical data are published in CESKOSLOVENSKA STATISTIKA, in the series entitled PRACE.)

Agriculture is among those branches of the national economy in which fundamental changes took place in the past era of creating socialism in Czechoslovakia. The concentration of agricultural land and other production assets led to the creation of a new material-technical base for agriculture and altered the entire character of that branch. The volume of capital assets was specifically increased, which resulted in substantial increases in the production capabilities and in efficiency in agriculture: the volume of its production more than doubled, the number of workers declined, and productivity rose. Whereas prior to socialization, one agricultural worker assured the nutritional needs of six people, today the number of people supported by one agricultural worker is almost three times as high.

## Development of Manpower in Czechoslovak Agriculture

The process of socialization involving Czechoslovak agriculture and its gradual transition from manual small-scale production to today's socialist large-scale production made possible the release of a significant number of workers from this branch for other branches and nonagricultural activities, primarily for industry. During 1948-1985, Czechoslovak agriculture lost virtually 1.3 million persons, that is to say, roughly 60 percent of its 1948 manpower (for purposes of comparison: during the same period, the number of workers in industry grew by virtually 1.2 million persons, that is to say, by three-quarters). This decline in the number of workers was manifested also in the diminished share of agriculture in the total of all workers in the national

economy of Czechoslovakia--from virtually 41 percent in 1948 to 12.5 percent in 1985. Despite the above developments, agriculture continues to be represented in the overall employment picture with relatively high figures; in the majority of developed nations, agricultural employment does not account for 10 percent (in agriculture and forestry in 1983, for example, Japan and France employed 8 to 9 percent of all economically active persons, Denmark, 7 percent; West Germany, Sweden, Holland, and Canada, 5 to 6 percent; Belgium and the United States, more than 3 percent).

The development of agricultural employment in Czechoslovakia was expressly influenced by women, whose numbers during this period declined by two-thirds (virtually by 800,000 women). In 1948, women accounted for 52.1 percent of all workers in agriculture and retained this majority through 1968; currently, the 390,000 women employed in agriculture represent 41.4 percent of all agricultural workers.

During the entire period, the share of the state and cooperative sector continuously grew and the influence of the private sector on all of agriculture was constantly declining. Whereas, in 1954, individual farmers, of whom there were 1.3 million, represented more than two-thirds of all workers in agriculture, the current 9,000 individual farmers account for not quite 1 percent. The development of the numbers and the changes in the structure of manpower in Czechoslovak agriculture after 1948 is shown in the following table:

Table 1. Average Number of Workers in Agriculture in Czechoslovakia During the Years 1948-1985 (in thousands)

<u>Indicator</u>	<u>1948</u>	<u>1950</u>	<u>1955</u>	<u>1960</u>	<u>1965</u>	<u>1970</u>	
Agriculture, total							
Absolute	2,236	2,056	1,932	1,466	1,259	1,178	
Share in national economy (%)	40.7	37.2	32.7	24.4	19.8	17.2	
Including the following sectors:							
State							
Absolute	...	...	299	274	347	315	
In %	...	...	15.5	18.7	27.6	26.7	
Cooperative*							
Absolute	...	...	314	894	734	716	
In %	...	...	16.2	61.0	58.3	60.8	
Private							
Absolute	...	...	1,319	298	178	147	
In %	...	...	68.3	20.3	14.1	12.5	
	<u>1975</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Agriculture, total							
Absolute	1,024	953	953	946	933	941	949
Share in national economy (%)	14.5	13.0	12.9	12.7	12.5	12.5	12.5

Table 1 (continued)

Indicator	1975	1980	1981	1982	1983	1984	1985
Including the following sectors.							
State							
Absolute	294	300	304	305	305	309	312
In %	28.7	31.5	31.9	32.2	32.7	32.9	32.9
Cooperative*							
Absolute	675	637	634	626	616	623	628
In %	65.9	66.8	66.5	66.2	66.0	66.1	66.2
Private							
Absolute	55	16	15	15	12	9	9
In %	5.4	1.7	1.6	1.6	1.3	1.0	0.9

\* Permanently active workers in unified agricultural cooperatives (including affiliated production operations).

#### Growth in the Qualification Level of Workers in Agriculture

The gradual improvement in the age structure of persons permanently active in agriculture which resulted--primarily through the JZD's--in the takeover of the socialist sector of agriculture through socialization of the private sector, also led to improvements in the qualification level of workers in this branch of the economy. Primarily unskilled workers left the working process. The development of the use of equipment in the plant production sector as well as in livestock production resulted in a significant decline in the number of manual workers and an increase in the share of persons working with agricultural equipment and individuals servicing its operation. The introduction of new equipment and technology in agriculture and its utilization, as well as a qualitatively new higher organization of work were also reflected in rising demands for worker qualifications.

In 1983, agriculture employed virtually 160,000 workers who had advanced school or specialized middle school educations, which means that virtually every sixth worker had such an education.

The rise in the number of workers who had an advanced school education was characterized by a very high dynamic rate--by 1983, their numbers in the state sector grew to virtually four times what they were in 1960 and in the cooperative agricultural sector, their numbers increased to a level 16 times higher than had been the case in 1960. The number of workers having a complete middle school education at a specialized middle school increased to roughly six-fold in the state sector, but to almost 12-fold in the cooperative agricultural sector. Both sectors recorded a decline in the number of workers having a middle school education (without having passed the maturity examination). The high rate of growth of the number of workers having an advanced school and middle school specialized education in comparison with the stagnation (in the state sector) and decline (in the JZD's) of the overall number of workers systematically created the preconditions for increasing the qualification level

of workers in Czechoslovak agriculture and was reflected in the growth of the share of workers having a higher degree of education in the overall number of agricultural employees.

Table 2. Development of the Number of Workers Having Advanced School and Middle School Specialized Educations in Agriculture During 1960-1983\*

<u>Indicator</u>	<u>1960</u>	<u>1966</u>	<u>1970</u>	<u>1973</u>	<u>1978</u>	<u>1983</u>
State Sector						
Absolute numbers:						
Total	26,085	39,082	38,729	48,324	59,979	77,301
Including those having the following educa-tions:						
Advanced school	5,134	7,158	8,189	12,024	13,881	19,825
Completed middle school education at specialized middle school	8,254	19,955	21,313	26,842	36,035	47,212
Middle school	12,697	11,969	9,227	9,458	10,063	10,264
Computed in terms of 1,000 workers:						
Total	95	108	122	157	192	246
Including those having the following educa-tions:						
Advanced school	19	20	26	39	45	63
Completed middle school education at specialized middle school	30	55	67	87	115	150
Middle school	46	33	29	31	32	33
JZD's						
Absolute numbers:						
Total	21,445	34,132	45,495	49,372	64,528	88,256
Including those having the following educa-tions:						
Advanced school	938	2,800	4,641	6,131	9,513	15,383
Completed middle school education at specialized middle school	4,760	16,829	24,739	28,649	41,204	58,082
Middle school	15,747	14,503	16,115	14,592	13,811	14,791
Computed in terms of 1,000 workers:						
Total	24	47	63	72	99	138

Table 2 (continued)

Indicator	1960	1966	1970	1973	1978	1983
Including those having the following educations:						
Advanced school	1	4	7	9	15	24
Completed middle school education at specialized middle school	5	23	34	42	63	91
Middle school	18	20	22	21	21	23

\* Including women on maternity leave and extended maternity leave.

Despite the specifically more rapid growth in the number and in the share of permanently active workers in JZD's having a higher degree of education the qualification level for workers in the cooperative sector of agriculture continues to be lower than that in the state sector, even though the difference in comparison with the state sector is substantially lower.

#### Changes in the Specialization of Permanently Active Workers in JZD's During the Year 1978-1983

During the period 1978-1983--while the overall number of permanently active workers in JZD's declined--the number of workers having advanced school and middle school specialized training continued to grow. In fact, the growth of workers having advanced school educations was more rapid (index of 160.3) than the growth in the number of workers having completed middle school education at specialized middle schools (index of 142.8). In both degrees of education, the growth in the number of women having this qualification outstripped the qualification development of men. The share of women in the overall number of workers having advanced school educations grew from 16.1 percent in 1978 to 20.2 percent in 1983; in the number of workers having completed middle school educations at specialized middle schools, women accounted for 44.3 percent in 1983 (only 42.1 percent in 1978). Another 580 women having advanced school educations and 3,179 women having completed middle school education at specialized middle schools, were released from the work process for maternity leave and extended maternity leave purposes by 31 October 1983.

After 1978, there were also changes in the structure pertaining to the number of workers by groups of study specialties.

With respect to advanced school graduates, the number of workers having nonagricultural specialties grew substantially faster; for example, Group 23--Engineering and Other Metal-Working Production (index of 315.5); Group 36--Construction, Geodetics, and Cartography (index of 247.9), but even Group 62--Economic Sciences (index of 372.6). The share of workers having advanced school educations of a nonagricultural character rose from 8.5 percent in 1978 to 18.8 percent in 1983.



The number of advanced school-trained workers in Group 41--Agriculture and Forestry Sciences--rose by 3,600 during the years 1978-1983, that is to say, by 47.4 percent, which represented virtually two-thirds of the entire increment in the number of workers having this type of education. More than 26 percent of the increment in the number of workers having advanced school educations of an agricultural nature were accounted for by women.

A similar situation prevailed regarding workers having completed middle school educations at specialized middle schools. The number of workers having followed a technical track doubled and tripled (for example, with respect to study Group 36--Construction, Geodetics, and Cartography, by 119.4 percent; with respect to Group 23--Engineering and Other Metal-Working Production, by 184.0 percent, etc.), although a specific decline occurred with respect to workers having an economics education (index of 89.8 percent), primarily involving men. In comparison to advanced school-trained workers, however, the number of workers having completed a middle school education at specialized middle schools of a nonagricultural character in the total number of workers having this degree of education declined from 1978 to 1983.

The increment in the number of workers having completed a middle school education at specialized middle schools in Group 41--Agriculture and Forestry (by 13,400, that is to say, 51.4 percent) accounted for virtually 80 percent of the total increase in the number of middle school graduates working in JZD's and was made up almost 60 percent of women.

Table 3. Intent of Specialization of JZD Workers Having an Advanced School Education and Having Completed Middle School Education at Specialized Middle Schools During the Years 1978-1983\*

Group of Study Specialty	Total		Including women
	Absolute	In %	
Advanced School Education			
1978			
Total	9,734	100.0	4,992
Including:			
23--Engineering and Other Metal-Working Production	81	0.8	1
36--Construction, Geodetics, and Cartography	117	1.2	3
41--Agricultural and Forestry Sciences	8,446	86.8	4,375
62--Economic Sciences	266	2.7	51
Completed Middle School Education at Specialized Middle School			
Total	18,481	100.0	10,180
Including:			
23--Engineering and Other Metal-Working Production	833	4.5	79

Table 3 (continued)

Group of Study Specialty	Total		Including Women
	Absolute	In %	
36--Construction, Geodetics, and Cartography	1,007	2.6	96
41--Agricultural and Forestry Sciences	25,390	66.0	7,809
62--Economic Sciences	10,041	26.1	7,772
1983	Advanced School Education		
Total	14,803	100.0	2,992
Including:			
23--Engineering and Other Metal-Working Production	265	1.8	6
36--Construction, Geodetics, and Cartography	290	2.0	24
41--Agricultural and Forestry Sciences	12,026	81.2	2,327
62--Economic Sciences	991	6.7	342
	Completed Middle School Education at Specialized Middle School		
Total	54,903	100.0	24,310
Including:			
23--Engineering and Other Metal-Working Production	2,371	4.3	185
36--Construction, Geodetics, and Cartography	2,159	3.9	264
41--Agricultural and Forestry Sciences	38,452	70.0	15,385
62--Economic Sciences	8,994	16.4	7,439

\* Excluding women on maternity and extended maternity leave.

Women are heavily represented, particularly in agricultural areas (they account for 19.3 percent of the advanced school graduates and 40.0 percent of middle school graduates) and in economic areas (34.5 percent and 82.7 percent, respectively), whereas their representation in technical areas is substantially lower (about 10 percent).

#### Technical-Economic Workers at JZD's and Their Qualification Structure

The increasing demands placed on organization and management of agricultural production also led to a gradual formation of an appropriate technical-economic apparatus, particularly at JZD's, and, thus, led to the gradual increase in its share in the overall number of permanently active persons in agriculture.



The number of technical-economic workers (in Class 6-9 of the Unified Employment Classification (Jednotna klasifikace zamestnani--JKZ)) grew in the JZD's from 1978 through 1983 by 9,000, that is to say, by 12.7 percent. More than two-thirds of the increment (6,000) was accounted for, however, by workers in the management and administration sector (Class 7 of the JKZ), whose numbers grew by one-fifth in comparison with 1978. In 1983, JZD's had 3,000 (7.2 percent) more workers in JKZ Class 6 than they had in 1978. The more than 82,000 technical-economic workers in 1983 accounted for 13 percent of all permanently active workers at JZD's (in 1978, they only amounted to 11 percent).

The high growth rate in the number of workers having advanced school and middle school educations active in JZD's in the years 1978 to 1983 was reflected in improvements of the qualification structure pertaining to technical-economic workers, as well as in the better fulfillment of requirements for education (see table on following page).

The number of technical-economic workers having advanced school educations grew by 5,000 (59.4 percent) over 5 years, including those occupying technical jobs by 3,000. The number of technical-economic employees having completed middle school educations at specialized middle schools (including those with a higher degree of education) grew by 11,000 (by 28.5 percent), including an increase of 5,000 occupying technical jobs. A specific decline was recorded in a number of technical-economic workers having merely a basic education--by one-third, that is to say, by 5,000, and those having a middle school education (without having passed the maturity examination), which declined by one-fifth, that is to say, by 2,000.

#### Key to Table:

1. Degree of education
2. Required education
3. Actually attained educational level
4. Absolute
5. Structure in %
6. Jobs requiring a certain level of education occupied by workers having the following educations
7. Higher than required
8. Required
9. Lower than required
10. Total (Classes 6-9 of the JKZ) by 31 October 1978
11. Including technical workers (Class 6 of the JKZ)
12. Workers in management and administration (Class 7 of the JKZ)
13. Total (Classes 6-9 of the JKZ) by 31 October 1983
14. Total
15. Including those with the following educations
16. V = advanced school education
17. US = completed middle school education at specialized middle school or gymnasium
18. S = middle school education (without maturity examination)
19. Z = basic education and apprenticeship

Qualification Structure Pertaining to Technical-Economic Workers (Classes 6 Through 9 of the JKZ) at JZD's During 1975 and 1983

Stupeň vzdělání  (1)	Požadované vzdělání (2)		Skutečně dosažené vzdělání (3)		Na místech s požadovaným stupněm vzdělání pracují pracovníci se vzděláním (6)					
	abs. (4)	struk- tura v % (5)	abs. (4)	struk- tura v % (5)	vyšším než požado- vaným (7)		požado- vaným (8)		nižším než požado- vaným (9)	
					abs.	v %	abs.	v %	abs.	v %
(10) Celkem (tř. 6—9 JKZ) k 31. 10. 1978										
Ohrnem (14)	72 982	100,0	72 982	100,0	2 268	3,1	42 110	57,7	28 584	39,2
v tom se (15)										
vzděláním:										
V (16)	19 010	26,1	8 983	12,3	x	x	7 938	41,8	11 072	58,2
OS (17)	44 711	61,3	38 121	52,3	1 032	2,3	29 534	66,1	14 145	31,6
S (18)	8 491	11,6	10 750	14,7	1 220	14,4	3 904	46,0	3 367	39,6
Z (19)	750	1,0	15 108	20,7	18	2,1	734	97,9	x	x
(11) z toho: techničtí pracovníci (tř. 6 JKZ)										
Ohrnem	40 566	100,0	40 566	100,0	1 222	3,0	22 395	55,2	16 949	41,8
v tom se										
vzděláním:										
V	11 924	29,4	5 843	14,4	x	x	5 107	42,8	6 817	57,2
OS	24 081	59,4	19 934	49,2	732	3,0	14 933	62,0	8 416	35,0
S	4 107	10,1	5 529	13,6	476	11,6	1 915	46,6	1 716	41,8
Z	454	1,1	9 260	22,8	14	3,1	440	96,9	x	x
(12) pracovníci na úseku řízení a správy (tř. 7 JKZ)										
Ohrnem	32 369	100,0	32 369	100,0	1 045	3,2	19 697	60,9	11 627	35,9
v tom se										
vzděláním:										
V	7 085	21,9	3 140	9,7	x	x	2 831	40,0	4 254	60,0
OS	20 619	63,7	16 174	50,2	300	1,4	14 590	70,8	5 729	27,8
S	4 369	13,5	5 214	16,1	743	17,0	1 982	45,4	1 644	37,6
Z	296	0,9	5 841	18,0	2	0,7	294	99,3	x	x
(13) Celkem (tř. 6—9 JKZ) k 31. 10. 1983										
Ohrnem	82 200	100,0	82 200	100,0	4 708	5,7	54 010	65,7	23 482	28,6
v tom se										
vzděláním:										
V	20 209	24,6	14 315	17,4	x	x	11 340	56,1	8 869	43,9
OS	56 117	68,3	46 977	59,6	2 950	5,3	40 429	72,0	12 738	22,7
S	5 300	6,5	8 638	10,6	1 748	32,6	1 737	32,4	1 875	35,0
Z	514	0,6	10 070	12,2	10	1,9	504	98,1	x	x
z toho: techničtí pracovníci (tř. 6 JKZ)										
Ohrnem	43 488	100,0	43 488	100,0	3 031	7,0	28 411	65,3	12 046	27,7
v tom se										
vzděláním:										
V	10 998	25,3	8 912	20,5	x	x	6 636	60,3	4 362	39,7
OS	29 741	68,4	24 736	56,9	2 254	7,6	20 616	69,3	6 871	23,1
S	2 384	5,5	4 107	9,4	768	32,2	803	33,7	813	34,1
Z	365	0,8	5 733	13,2	9	2,5	358	97,5	x	x
pracovníci na úseku řízení a správy (tř. 7 JKZ)										
Ohrnem	38 696	100,0	38 696	100,0	1 677	4,3	25 584	66,1	11 435	29,6
v tom se										
vzděláním:										
V	9 209	23,8	5 401	14,0	x	x	4 702	51,1	4 507	48,9
OS	26 362	68,1	24 228	62,6	696	2,6	19 600	75,1	5 866	22,3
S	2 976	7,7	4 730	12,2	980	32,9	934	31,4	1 062	35,7
Z	149	0,4	4 337	11,2	1	0,7	148	99,3	x	x

Whereas in 1978 approximately 60 percent of the jobs were occupied by workers with the necessary or higher degree of education and the remainder of the jobs were held by workers failing to fulfill the educational requirements, by 1984, the number of workers fulfilling their requirements for a level of education was increased to 71 percent. A more favorable situation with respect to fulfilling the qualifications requirement obtained in 1983 with respect to technical workers (only slightly fewer than 28 percent of jobs were held by workers with a lower degree of education) than existed with respect to workers in the management and administration area (29.6 percent).

Some 56 percent of the jobs requiring advanced school education were held by workers with the appropriate levels of education, including technical workers (60.3 percent) and administrative workers (51.1 percent). Similarly, jobs requiring a completed middle school education at specialized middle schools were not fully occupied by workers having the required degree of education--only 77.3 percent (with respect to technical workers, this figure was 76.9 percent and workers in administration and management, 77.7 percent).

As in other areas, jobs requiring advanced school educations and middle school educations in JZD's were held by workers with basic educations or completed apprenticeships. Roughly every eighth worker holding a position classified in Group 6-9 of the JKZ (that is to say, jobs of a mental character) had attained only a basic education or had completed his apprenticeship--this figure being roughly 20 times greater than the figures for educational requirements contained in qualification catalogues.

#### Manual Workers in JZD's and Changes in Their Qualificational Structure During the Years 1979-1984

The number of manual workers in JZD's by 30 September 1984 was practically at the same level at the same date in 1979: During the above 5-year period, the JZD's recruited 26,000 new male workers for manual work as replacements for roughly the same number of women which switched to other work or left the labor force completely.

However, the development of the structure of manual workers by sex was quite different with respect to individual groups of work qualification which were statistically followed.

The number of permanently active persons working in professions in which apprenticeships are conducted (Group A) declined in 1979-1984 and this decline was accompanied by a more rapid decrease in the number of women than in the number of men so that the share of women in the overall number of employees in this group dropped significantly. In 1984, they accounted for 69.1 percent of the overall number of manual workers in Group A (in 1979, 78.0 percent).

The number of persons working in professions which do not require an apprenticeship, but in which, for the most part, a specialized qualifying examination is needed (Group B), stagnated in the years 1979-1984; in these professions, women are relatively poorly represented. However, during the period under consideration, the number of unskilled manual workers rose significantly

(primarily these are women; older workers account for more than one-fourth of these people).

Table 4. Development of the Numbers and Structure of Manual Workers in JZD's for the Years 1979-1984

Indicator	Total	Including Women		Total	Including Women		Index 1984/1979	
		Absolute	In %		Absolute	In %	Total	Women
Total (A + B + C)	545,543	254,897	46.7	545,396	228,963	42.0	100.0	89.8
Including:								
A	425,293	205,921	48.4	377,010	147,067	39.0	88.6	71.4
B	44,989	8,027	17.8	44,758	6,694	15.0	99.5	83.4
C	75,261	40,949	54.4	123,628	75,202	60.8	164.3	183.6

A = professions in which apprenticeships are conducted; B = other professions which, for the most part, require special examinations; C = unskilled work.

The number of permanently active manual workers working in professions which do require an apprenticeship underwent not only quantitative changes in 1979 but also qualitative changes.

The structure of workers listed by preliminary specialized training improved substantially: The number of journeymen in their area or in the related area grew expressly (from 31.2 percent in 1979 to 55.3 percent in 1984). Nevertheless, the qualifications of more than one-third of the workers in Group A is given merely by on-the-job training and long-term experience (in the agriculture and forestry professions, this is true of roughly one-half of the employees). The share of skilled women in the overall number of women working in professions in which apprenticeships are conducted continues to be substantially lower (33.8 percent) than the appropriate share of men (69.1 percent).

Key to Table 5:

- |   |                              |
|---|------------------------------|
| 1. Group of professions   | 2. Total number of employees |
| 3. Of the total number  | 4. Apprenticeship            |
| 5. On-the-job training  | 6. No training               |
| 7. Total (Group A)  | 8. Including                 |
| 9. 01--Tool Setting, Operation and Servicing of Production Machinery and Installations                      |                              |
| 10. 02, 03--Metallurgy, Engineering, and Other Metal-Working Production                                     |                              |
| 11. 04--Electrotechnology, Transportation, Posts, and Telecommunications                                    |                              |
| 12. 08--Wood Processing, Production of Musical Instruments, Processing of Hides, and Production of Footwear |                              |
| 13. 09--Construction and Geodesy  |                              |
| 14. 45--Agricultural and Forest Economy   |                              |
| 15. 64--Economics and Organization, Trade and Services  |                              |

Table 5. Qualification Structure of Manual Workers in JZD's in 1979 and 1984

Skupina povolání (1)	Celkový počet pracov- níků (2)	(3) z celkového počtu					
		(4) vyučení		(5) zaučení		(6) nevyučení	
		abs.	v %	abs.	v %	abs.	v %
1979							
Celkem (skupina A) (7)	425 293	132 494	31,2	261 666	61,5	31 133	7,3
z toho: (8)							
01 Seřizování, řízení a obsluha výrobních strojů a zařízení (9)	61 951	38 755	59,3	22 471	38,3	2 725	4,4
02, 03 Hutnictví, stroji- renství a ostatní ko- vodělná výroba (10)	44 824	38 472	85,8	5 026	11,2	1 328	3,0
04 Elektrotechnika, doprava, pošty a te- lekomunikace (11)	4 330	4 082	94,3	179	4,1	69	1,6
08 Zpracování dřeva, výroba hudebních nástrojů, zpracování kůže a výroba obuvi (12)	4 302	3 027	70,4	948	22,0	327	7,6
09 Stavebnictví a ze- měměřičství (13)	28 528	19 103	67,0	7 981	28,0	1 434	5,0
45 Zemědělství a lesní hospodářství (14)	280 634	30 708	10,9	224 774	80,1	25 152	9,0
64 Ekonomika a orga- nizace, obchod a služby (15)	709	344	48,5	277	39,1	88	12,4
1984							
Celkem (skupina A)	377 010	208 590	55,3	132 790	35,2	35 630	9,5
z toho:							
01 Seřizování, řízení a obsluha výrobních strojů a zařízení	37 101	26 262	70,8	8 291	22,3	2 548	6,9
02, 03 Hutnictví, stroji- renství a ostatní ko- vodělná výroba	48 675	40 950	84,1	4 823	9,9	2 902	6,0
04 Elektrotechnika, doprava, pošty a te- lekomunikace	7 492	5 777	77,1	858	11,5	857	11,4
08 Zpracování dřeva, výroba hudebních nástrojů, zpracování kůže a výroba obuvi	7 050	4 339	61,5	1 915	27,2	796	11,3
09 Stavebnictví a ze- měměřičství	39 416	28 387	72,0	7 571	19,2	3 458	8,8
45 Zemědělství a lesní hospodářství	227 514	98 221	43,2	106 130	46,6	23 163	10,2
64 Ekonomika a orga- nizace, obchod a služby	6 296	3 321	52,8	1 942	30,8	1 033	16,4

\* The distribution of workers by groups of work qualification was influenced by the approach taken toward the reporting of data in JZD's as was the case in the other organizations of the socialist sector: In 1979, the principal criterion for listing unqualified workers was the number of years worked in agriculture; in 1984, the criterion was their inclusion in qualification categories.

The demanding tasks of Czechoslovak agriculture in conjunction with assuring further increases in self-sufficiency with respect to basic foodstuffs require

that attention continue to be focused upon lowering the consumption of socially necessary live labor in this sector while simultaneously increasing the demands for raising its level of qualification.

The share of workers in professions of the agricultural and forestry group in the total number of workers working in professions in which apprenticeships are conducted which amounted to 66.0 percent in 1979 declined to 60.3 percent in 1984. More than 43 percent of all workers and roughly one-third of all women are trained in professions in which they work or in related areas (in 1979, it was only 11 percent). The decline in the number of workers in professions in the agricultural and forestry group was completely taken care of from the ranks of workers with on-the-job training.

In the nonagricultural professional groups, the number of workers increased by 3.3 percent compared with 1979 (by 5,000); in these professional groups, journeymen workers hold the absolute majority (with exception of the group involved in the technical chemistry of silicates and the remaining field of technical chemistry).

5911

CSO: 2400/340



## NEW MEASURES TO ESTIMATE VEGETABLE YIELDS

Bucharest REVISTA ECONOMICA in Romanian 23 May 86 p 8

[Article by Dr Gh. Fratila]

[Text] Council of State Decree 77/1986 on Field Evaluation of Vegetable Production has special importance within the general measures for improving the organization and leadership of agriculture, for increasing the spirit of responsibility and strengthening work discipline. It provides the organizational framework and establishes the responsibilities of the agricultural and state organs for knowing, following up on and recording the evolution of crops as well as determining quantitatively and qualitatively the production in all categories of agricultural units, in other units holding agricultural land as well as on the population's plots. Evaluation of agricultural production is thus established in an economic and technical work which is obligatory for all holders of agricultural land, on the basis of which one may know the status of crops at various phases of vegetation, with action able to be taken effectively to eliminate any factors negatively affecting their production potential.

The special economic importance of field evaluation of vegetable production is determined primarily by the fact that the most appropriate technical and organizational measures can be taken in time by knowing the production potential beforehand so that the harvest campaign can take place under optimum conditions. Second, this permits provision of storage areas or product-processing areas at the level of requirements, spreading out transport to the beneficiaries and so forth. By comparing production evaluated in the field with actually harvested and stored production one may analyze the causes of losses of products and, as a result, action may be taken to limit or even eliminate them once and for all. Last but not least, timely knowledge of production which can be obtained permits substantiation of the balances by products (including fodder and raw materials for the processing industry and so forth) and establishment of reserves for export.

The technical nature of the evaluation process is determined by the fact that members of the evaluation commissions have the task of checking, following up on and verifying if all the crops were sown in the optimum period on the areas included in the crop plan, the quality of the projects completed, the density of plants, soil used and so forth. Also, in conformity with the methods approved, in the first stage it is necessary to make the evaluation according to the vegetable aspect of the plants, which means following the vegetation status

of the crops in the most characteristic phases of their development. Following the crops' vegetation status from sowing until they ripen, the specialists in the agricultural units have the opportunity to constantly know the way in which technical and natural factors affect plant development, the appearance of negative phenomena and so forth. Against this background they are capable of taking the most appropriate decisions to provide those growing conditions for the crops which lead to fulfillment and overfulfillment of the planned production.

The improvements made in the evaluation methods mainly concern the organizational framework and actual evaluation methods.

So, in order to increase the responsibility of the units and agricultural coordinating organs in timely and correct evaluation of vegetable production, also included in the evaluation commissions in the agricultural units, along with unit specialists, are representatives of the general directorate for agriculture, the county branch of the bank for agriculture and the food industry and the county enterprise for contracts, acquisitions and preservation of agricultural products. Similarly, commune, municipal, city evaluation commissions also have been organized. This structure has created the organizational framework necessary so that both the specialized organs as well as beneficiaries of agricultural products to a greater extent are aware of the status of vegetation of the crops, the efforts made by the units to provide normal development conditions for the crops, the production potential of the various crops and so forth, with losses able to be avoided and restricted on this basis.

A number of improvements in the technical evaluation standards also have been made in order to increase the degree of exactness in determining per hectare production in the field. A qualitative structuring of certain elements affecting the level of average production has been provided for many crops (wheat, corn, sunflower and so forth). For example, for corn, besides numbering the ears in a metric frame (as was the procedure until now), it is necessary for them to be grouped by quality in large ears, medium and small ears. The procedure was similar for corn cobs, for sunflowers and so forth. This additional operation provides an increase in the role of quality factors in evaluating the crops' production potential, the objectively necessary agreement between the real status of development of the crops and the status determined by tests. Also in the direction of reducing eventual deviations between real production and production estimated by evaluation, the area of a test was increased in particular for the weeders. For example this is 28 square meters (4 rows x .70 x 10 meters length) for corn and sunflowers.

Along with these improvements in the technical evaluation standards, three terms are provided for carrying out the actual evaluation process which, overall, permit preparation and carrying out of evaluation of vegetable production under appropriate quality conditions, in agreement with the economic importance given this process by society. By carrying out the preevaluation, evaluation and final evaluation of production in a period of between 20-30 days (sometimes even more), the agricultural units have the opportunity to learn all the particular features of distribution of the crops on the territory, their development at the date of evaluation and future development and, as a result, they have the opportunity to organize the entire evaluation process at the level of demands. It is important that the opportunity for zonal differences in terms for making the evaluation is provided for the purpose of discovering the objective aspects



of the agricultural production process and, at the same time, the correction of estimated production by taking into consideration the negative effect of certain natural factors (floods, hail and so forth), which may be seen following final evaluation.

All the factors involved must demonstrate objectivity and special attention to applying the technical standards while carrying out the evaluation work. Practical experience has shown that due to the relatively large volume of work done during the activity of collecting the tests, sometimes a minimizing of the importance of determining certain elements with the greatest possible exactness occurs (height of the ears, number of kernels on the average and so forth), which are essential for establishing the real level of production.

Mistakes in calculating the decisive elements for establishing average per hectare production to a greater or lesser extent have repercussions, depending on the specific nature of the products, on the results of evaluation for all crops and to a significant extent affect the entire evaluation process, at the same time having a negative effect on other levers of the units' activity.

8071

2700/211

## CEMA COOPERATION IN INDUSTRIAL ROBOTIZATION DISCUSSED

Prague SVET HOSPODARSTVI in Czech 7 May 86 p 2

[Article: "Robotization: Shift to More Advanced Forms of Cooperation; Joint Design of Robotized Equipment Complexes and Production Systems"]

[Text] At the 41st CEMA Plenum in Moscow at the end of last year it was decided to adopt a Comprehensive Program for R&D Progress for the CEMA Member Countries Through the Year 2000. This program reflects requirements that stem from the need to assure the future socio-economic development of the socialist community as a whole, and of each member country individually. The content of the Program is focused on five priority areas for the development and application of research and development within the national economy. These include electronization, comprehensive automation, nuclear power generation, the development of new materials and techniques, and biotechnology.

Each of these priority fields contains tasks the economic parameters of which fluctuate within constraints which result in significant advances in the technical and economic sophistication of specific national economic sectors. In areas such as electronization and automation a primary result will be the broadly based automation of design work and managerial processes, with an impact on the social infrastructure of society.

Comprehensive automation of this sector encompasses, among other things, the development and introduction of flexibly automated products including the intensive application of industrial robots and manipulators. The development of robotization in Czechoslovakia in the Eighth 5-Year Plan is being assured through state priority program A-95, The Robotization of Technical Processes. This is characterized by an attempt to shift from the production and installation of individual robots and manipulators to their installation in groups as robotized equipment complexes and more complicated production groupings.

The fundamental objectives of priority program A-05 specify for the Eighth 5-Year Plan the installation of a minimum of 3,725 robotized worksites, with the maximum feasible level of integration into robotized complexes. The implementation of this program is to utilize about 6,960 industrial robots and manipulators. The installation of robotized worksites and complexes should eliminate by 1990 in the user sphere some 11,500 jobs in comparison with the situation before the start of the program, and bring

about a reduction of production costs on the order of Kcs 1.2 billion. Among other things, program objectives include export targets for robotized worksites, industrial robots and manipulators amounting to Kcs 1.44 billion.

The adopted Comprehensive Program reflects the profound international role of the Soviet Union. Its research and development potential accounts for 70-80 percent of the total R&D potential of the socialist countries and for most tasks it bears the brunt of the responsibility for assuring basic achievements in R&D. In the area of robotization our cooperation with the Soviet Union began at a low level in 1978, with the exchange of technical findings and information, and has progressed to current cooperative efforts which are characterized above all by the founding of the International R&D association Robot.

The Presov Research Institute of the Metals Industry (VUKOV) has gradually signed with a number of research and development institutes in the USSR cooperative agreements for the development of industrial robots and manipulators for machine tools (using a type UM 160 ENIMS), for pressure casting machinery (with a NIS Odesa type MTL 10) and for press operations (using an ENIKMAS Voronez type AM 5). Through joint development efforts we have been able to shorten the development cycle by a number of years and the industrial robots and manipulators that have been developed for repetitive production processes in some of our plants have also become important export goods to the USSR. All three of the jointly developed models directly linked the results of R&D cooperation with plans and objectives for the development of specialization and cooperative production. The participation of the CSSR in this regard was made more precise by CSSR Government Presidium Resolution No 168/83 in conjunction with the unified concept for the development of robotization, and the adopted Framework Agreement on Multilateral Cooperation Between the CEMA Member Countries for the Development, Organized, and Cooperative Production of Industrial Robots and Manipulators Based on Unified Components, Subassemblies and Parts for Various Branches of the National Economy.

More advanced forms of cooperation have, however, been instituted for the assurance of more demanding tasks. At the Presov VUKOV there has been established, under the coordination of the State Commission for R&D and the State Committee of the USSR for R&D, an international design, engineering and technical office of Robot, the work of which is currently focused on the development of flexible production systems based on robotized equipment complexes. In March of last year the decisions were made concerning the organizational form of the international R&D Association Robot. A new, more advanced form of international cooperation marks the further expansion of R&D cooperation for the design and implementation of robotized equipment complexes and flexible production systems, cooperative production and supply activities. In this way the possibilities are developed for rapid adaptation to new conditions in the area of specialized and cooperative objectives, along with the preconditions for increased participation in the resolution of joint, comprehensive automated production systems in large investment and modernization projects that include a gradual shift to fully automated operations.

As with all higher level innovations, robotization has its own specific problems that have a number of causes. It is impossible to install effectively robots and manipulators by themselves. Rather, this must be done within the context of the modernization of the entire production base, increasing the sophistication of production organization and the outfitting of production facilities with modern equipment. The development of robotization is an objective necessity. The rate of innovation and production increases of robots and manipulators is more than 30 percent annually worldwide. The realization of the tasks of the Comprehensive Automation priority program will influence all aspects of social life, lead to a substantial increase in labor productivity, and increase significantly the overall technical sophistication and efficiency of production.

9276/9835

CSO: 2400/297

## MORE ATTENTION TO CSSR'S REPUTATION IN FOREIGN TRADE URGED

AU091412 Prague ZEMEDLSKE NOVINY in Czech 8 Jul 86 p 1

[Editorial: "At Home and Abroad"]

[Excerpt] Developing Czechoslovakia's share in the international division of labor is one of the pivotal prerequisites for the new quality of economic growth which we have chosen for the current 5-year plan and the upcoming periods. This is determined not only by our needs, but by our potential as well. Another thing that must not be ignored is the fact that the socialist economic integration and the bonds of friendship that link us with the other CEMA member-states make our position easier in many respects. Nevertheless, the tasks facing us here are not simple either.

First of all, it would be completely wrong--and we do this at times--to regard the market of the socialist countries as less demanding than the markets of the nonsocialist states. Just like us, our partners in CEMA have also adopted measures aimed at accelerating their economic and social development. Thus, they need, above all, quality and reliable technology, good products, and good service. In addition to this, we also must not ignore the fact that the intrabrand trade within the framework of the CEMA community's cooperation has already practically reached the limit of its possibilities. One has to search for new forms and methods of mutual collaboration and, in particular, to embark upon the path--thus far not yet well-trodden--of intrasectoral and intrabrand trade, and implement direct relations among production organizations. That, among other things, enables one to more meaningfully concentrate resources on research and development, and thus maintain production of top-notch standards.

It is not a good thing when we are still frequently willing, without much hesitation, to accept lower quality for domestic use, when for export, of course, we apply more demanding criteria. These attitudes are quite wrong, they are at variance with the new spirit and thinking which we want to assert in everyday practice. Aside from the fact that these attitudes unfairly hurt domestic customers, behind them there is a dangerously conciliatory attitude toward fundamental shortcomings which retard our economic, and thus also social, development. Our exports can only profit if they are based on generally high demands for quality and effectiveness, which will not permit wasting valuable materials, energy, human work, skills, and initiative on products that satisfy neither our customers nor foreign ones.

It seems that external economic relations are for us not infrequently still something that is unusual and something distant, and not much connected with everyday life. It is as if many suppliers of finished products were abiding by it; thanks to their inadequate flexibility we often lose customers or do not get good prices. Of course, if we want to really accelerate our development--to implement the new thinking in practice--then it is necessary in all quarters to feel a genuine responsibility for our reputation abroad. We simply cannot do without economic cooperation and trade with the world. On the contrary, the better results we achieve in that field, the greater gain will that be for every one of us.

/9871

CSO: 2400/349

## PARTY CONGRESS PLANS AUTOMATION, MICROELECTRONICS PRODUCTION

West Berlin FS ANALYSEN in German No 2, 1986 (signed to press mid-May 1986) pp 39-54

[Article by Klaus Krakat with the (West Berlin) Research Institute for Inner-German Economic and Social Issues. Selected report dealing with the theme of Economic and Socio-Political Aspects of the 11th SED Party Congress under the rubric: "GDR Plans for Electronics Application and Automation Plans"]

[Text] GDR Planning for Implementation of Microelectronics, Automation

1. Optimistic Evaluation of Prior Technological Development Despite Existing Problems

At the end of the recently completed 5-Year Plan 1981-1985, the leadership of the Party and of the economy of the GDR can undoubtedly point to demonstrated successes in the country's electronics and electrical engineering industries, above all when compared with the initial situation in microelectronics at the end of the 1970's. The following factors have been and are being cited as examples of these successes:

- the production of electronic components including integrated circuits and the growth rates which have been achieved in this area(1);
- the increase in the production of microcomputer systems, especially for use in the areas of data processing and measuring, control and regulating technologies;
- the increases in the production of computers (general-purpose ESER computers(2), office computers, personal computers, etc.) as well as
- the production of industrial robots.

Furthermore, in close correlation with this, the first-rate performance of GDR combines in the industrial sector of electrical engineering/electronics was underscored, particularly at the fairs(3) in Leipzig and Hannover in the spring of 1986(4). Factors receiving special attention included:

- Robotron typewriter technology with its electronic typewriter;
- Robotron printing technology, above all with its dot-matrix printer;



--the automatic exposure technology for the production of circuits (e.g., the central automatic exposure device (ZAB 20) from the Carl Zeiss Combine in Jena and

--the electron beam technology (electron beam multi-chambered oven) for the manufacture of ultra-fine materials from the combine VEB Hans Beimler Locomotive Manufacture and Electrical Engineering in Henningsdorf, which is based on the R&D results of the Manfred von Ardenne Institute in Dresden.

When top level performance by the combines in the GDR in the industrial sector of electrical engineering/electronics is discussed in the GDR, it is limited, also in the opinion of GDR experts, in comparison with the performance levels of leading Western industrial countries, usually to just a few products and/or examples which have remained up to now without any particular influence on elevating the overall technological level. For this reason, therefore, the leadership of the party and of the economy of the GDR has for years been calling for the development and preparation of more and genuine top-level achievements which are in keeping with advanced international technological levels. West German economic experts agree on several reasons for the slow development of scientific-technological progress to date in the GDR and which therefore justify the repeated demand for more top-level achievements.(5)

(a) One of the basic obstacles to scientific-technological progress in the GDR is the lack of innovative capacity in the combines. Basic innovations have up to the present time not been realized to the extent that would be necessary, above all because they are an obstacle to the combines in their efforts to meet plan targets. The renewal rates of products were for that reason hardly sufficient to keep up with stepped-up requirements.

(b) Investments for the realization of basic technologies have up to now been available only to a limited extent. The shortage of investments therefore had a negative impact particularly on the innovation process.

(c) In many cases, willingness on the part of the combines and enterprises to pursue innovation was held back by the overly bureaucratic planning and management system that exists in the GDR, a fact which has been criticized in the past by GDR scientists. A series of new problems emerged in the GDR as a result of these "fundamental obstacles":

--High losses for the GDR economy as a result of claims made on exports, because in several combines product quality did not meet customer expectations.

--The "research and transfer process," which is still too slow.

--The total number of currently installed computer capacities, which is also described by GDR data processing specialists as inadequate.

--Imminent and already evident obstacles to CAD/CAM solutions(6), because there are not enough specialists equipped to work with CAD/CAM.



- Insufficient production levels of important integrated circuits, especially of the 64K RAM memory chips(7), which have already forced Import-Export Electrical Engineering, an enterprise oriented to foreign trade, to buy these memory chips in the West, since they are needed for GDR industry.(8)
- Finally, the costs involved in the production of circuits are relatively high because of manufacturing factors, leading to prices far higher per chip than those of Western manufacturers.

## 2. Initial Situation for Sought-After Implementation of Electronics, Automation

A comprehensive foundation for the planned technological development has been created in the GDR, especially after publications which appeared prior to the 11th Party Congress of the SED in the GDR within the framework of the state-controlled competitive obligations of the combines and the information made public both at the CeBIT Fair in Hannover and the Spring Fair in Leipzig. Efforts to create the needed foundation for the development of electronics and automation focus around the development and delivery of special equipment for the future production of circuits by the Carl Zeiss Combine in Jena. It was announced that the groundwork for the production of 256K memory chips was first laid.(9) Present activities are concentrated on the production of megabit memory chips: the claim has been made that with "the products manufactured in 1985" an important basis in terms of production technology has been created for 1 megabit of memory.(10) Wolfgang Biermann, general manager of the Carl Zeiss Combine in Jena, reported in his talk at the 11th Party Congress of the SED that an additional scientific advance was created as an object for consideration by the Party Congress with the "completion of the first prototype of a new electron beam exposure device as a prerequisite for the development and production of circuits up to an integration level of 4 megabits."(11)

## 3. Electronics, Automation Projects During 5-Year Plan 1986-1990

### 3.1 Plan Targets for 1986, First Results of Planning, Technology Applications

A comprehensive foundation for the planned technological development has been created in the GDR according to publications which appeared in the GDR especially in advance of the 11th Party Congress of the SED, within the framework of the state-controlled competitive obligations of the combines and the information made public both at the CeBIT Fair in Hannover and the Spring Fair in Leipzig. Already at the beginning of 1986, extensive competitive activities began in the GDR on the occasion of the 11th Party Congress of the SED in April 1986. Within the framework of this competition, the industrial combines announced initiatives and/or initial competitive goals for 1986.

For example, Robotron in Dresden intends to "additionally complete the following products in 1986 ...particularly in order to ensure CAD/CAM technology."(12)

- 10,000 8-bit personal computers PC 1715,
- 1,000 8-bit office computers A 5120/A 5130,
- 200 16-bit desktop computers A 7100,
- 30 small DP systems K 1630 and
- 4 ESER EDP systems EC 1056.

However, the competitive initiative of the Robotron Combine in Dresden was not extended to include the stepped-up production of home computers. The overall production of these computers will therefore remain limited. For this reason, home computers cannot yet be purchased especially by interested young people in special shops or department stores. In keeping with "society's needs," these computers will for the time being continue to be made available to educational institutions (colleges and universities, etc.).

In order to realize the cited additional production levels as well as other projects involving electronic and automation solutions in 1986, production levels must be increased especially at the Microelectronics Combine in Erfurt. For example, the "Soemmerda Initiative," i.e., the projected doubling of the number of personal computers model PC 1715 (instead of 10,000, 20,000 PCs) planned by the VEB Robotron Electronics in Soemmerda is to be ensured, in the first place by the delivery of circuits in a volume surpassing that called for in the current economic plan. In overall terms, the combine hopes to produce one million circuits "over the plan" and also to increase production of electronic consumer goods (e.g., quartz watches, pocket calculators, pocket radios and chess computers) to meet the needs of the population.(13)

The planned projects of other combines and industrial sectors for the first year of the new 5-Year Plan 1986-1990, for example for the implementation of 13,000 new industrial robots, has been mentioned in the "Law concerning the National Economic Plan of 1986", as well as elsewhere.(14)

A demonstration of the introduction of initial CAD/CAM solutions in the industrial combines and in the construction industry as well as the agreement to realize additional solutions of this type by the end of 1986 were in the center of competition on the occasion of the SED Party Congress in spring 1986.(15) It is possible that computer-assisted techniques were declared as belonging to CAD/CAM which, measured against the requirements of Western users, would hardly deserve this designation. In overall terms,(16) the first quarter of 1986 saw:

- 5,266 office and personal computers produced at the Robotron Combine,
- 3,575 industrial robots manufactured by various industrial combines and
- 2,273 CAD/CAM solutions made operational in industrial combines and in the construction sector.

Without a doubt, this public announcement of already-realized planning tasks within the first quarter of 1986 should underscore the intended implementation according to plan of all of the objectives established in the areas of

electronics and automation which were named at the 11th Party Congress both by Honecker and also by Stoph and, last but not least, in the directive of the Party Congress.

Robotron Dresden believes that it will be able to meet the impending requirements by means of an expansion in its production capacities, in particular for the manufacture of its personal computers, desktop computers and office computers, basic computer systems and the ESER EDP system. In the past, the combine's activities focused on:

- The development (and series production planned for 1986) of the ESER EDP system EC 1056, a computer system of the development Series 3 of the ESER;
- The development (with series production also planned for 1986) of the 16-bit desktop computer A 7100;
- The development and production of products of printing and typewriter technology (e.g., Robotron matrix printers and electronic typewriters) as well as
- The development and production of hardware components for the realization of CAD/CAM solutions (computer systems, plotters, digitizers, image-processing systems, intelligent graphics terminals).

According to information announced at the fairs, Robotron believes itself ready to offer "a spectrum of basic CAD/CAM systems and components with graduated performance levels. This spectrum reaches from OEM...for flexible programmed machine control...to complete advanced computer-integrated manufacturing automation (CIM)."(17)

However, Robotron also emphasizes new applications for its computer technology, which were developed in its own software company, VEB Robotron Project Dresden. These include among others:

- Relational database solutions for work with Robotron microcomputers, office computers and personal computers;
- A data communications system for data communication, remote data processing and computer networking;
- Standard software for text processing and spreadsheets;
- The application "automated control of tall shelf storage" in order to optimize industrial transportation and storage processes;
- Applications for use with CAD/CAM workstations (in cooperation with the VE Data Processing Combine) and
- Software for the establishment of local area networks.

For some time, the Robotron Combine in Dresden and the Communications Electronics Combine in Leipzig have been coordinating their research and

production activities, in order to be able to develop integrated solutions for data communications in keeping with the international trend.

The implementation of manufacturing automation on the basis of flexible manufacturing systems has remained almost in the shadow of the CAD/CAM euphoria. The first examples of this were introduced at the Leipzig Spring Fair of 1984 by the Machine Tool Construction company of the GDR.(18) Since that time, a move has been made to establish flexible manufacturing lines and processing centers at industrial combines that "play a key role in determining the economic structure" of the country.(19) However, in this sector of production automation, the GDR is still in the early stages of a new development.

### 3.2 Resolutions of the Party Congress concerning the Enhancement of Electronic and Automation Solutions in the GDR

The technology planning to the year 1990 which was established by the 11th Party Congress of the SED is regarded as a solid component of the objectives named in the complex programme of the CEMA states in the areas of electronics and automation for their individual economies. The GDR will concentrate in the future area of scientific-technological development above all on the following planning complexes (cf. also the following table):

#### (a) The Megabit Project

Seven years after the start of series production of the 1K RAM memory chip in the USA, the microelectronics industry of the GDR introduced the first models of a 1K RAM memory chip, the U 253 D, from a test production at the 1977 Spring Fair in Leipzig. Series production of this chip did not begin until about three years later.

When series production of the 64K RAM memory chip U 2164 was announced in the GDR in 1985, six years had passed since the production of this type of 64K RAM chip had begun in Japan and the USA. According to information from the GDR, it appears that the Microelectronics Combine in Erfurt experienced difficulties with the manufacture of these memory chips, thus the request for a significant increase in production output, which meant a reduction in the reject rate was by no means arbitrary. In view of the complexity of the production process of 256K RAM chips, which is acknowledged even by Western IC manufacturers, and the difficulties with which the GDR is confronted in the production of its 64K RAM chips, one can imagine that the production of 256K RAMs will not be carried out without problems and will be accompanied by a pronounced time lag as compared with the USA and Japan. For this reason it seems doubtful whether production of the 1-megabit chip would have been fully mastered by the end of the current 5-Year Plan to ensure a cost-effective series production. In any case, in view of the still unsolved "transfer problem" in the GDR, for the Microelectronics Combine in Erfurt it will not be a question of appearing on the IC market as a "dynamic enterprise" in Schumpeter's sense of the term, i.e., in the shortest possible time to realize "pioneer profits" by means of a well-targeted innovation, and thus to cover the high costs of research and development. If only because of the obstacles described in the beginning of this article, it is inevitable that in the long run an emulation of proven Western developments will take place, although with



a clear time lag, not only for megabit chips, but also in the case of more advanced microprocessors (32 bit microprocessors) and other integrated circuits.(20) Independent of this, the future production of circuits during the 5-year plan period to 1990 will depend both on the adequate availability of specialized new devices for the manufacture of chips from the combines Carl Zeiss in Jena and Microelectronics in Erfurt, as well as on the absolute mastery of the production processes, in particular the production of the 1 megabit chip.

Table: Production Goals in Industrial Sector of Electrical Engineering/Electronics during 5 Year Plan Period 1986-1990

Systems and Hardware for Production and Office Automation		Planned Targets 1986-1990 (unit quantity)
Electronic	office & personal computers	160,000 - 170,000
Computer	small EDP systems	1,900 - 1,950
Technology	general-purpose computers	660 - 670
Industrial robots		75,000 - 80,000
(including flexible robots)		10,000 - 12,000
CAD/CAM workstations		85,000 - 90,000
Flexible manufacturing segments in the combines in machine tool construction and electrical engineering/electronics		80
Complex automation projects in other branches of the national economy		35

#### SOURCES

"Erfolgreicher Weg der Gestaltung der entwickelten sozialistischen Gesellschaft in der DDR, Zahlen und Fakten" [Successful Paths to Shaping Developed Socialist Society in the GDR, Numbers and Facts], compiled by departments of the Central Committee of the SED and the State Central Administration for Statistics of the GDR (Documentation on the occasion of the 11th Party Congress of the SED 1986) April 1986, pp 26, 33, 35;

"Bericht des Zentralkomitees der SED an den XI. Parteitag der SED" [Report of the Central Committee of the SED on the 11th Party Congress of the SED]. Report prepared by Erich Honecker to the 11th Party Congress of the SED. In: NEUES DEUTSCHLAND, 18 April 1986, p 5;

"Direktive des XI. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1986 bis 1990" [Directive of the 11th Party Congress of the SED Concerning the 5-Year Plan for the Development of the GDR Economy 1986-1990]. Report prepared by Willi Stoph. In: NEUES DEUTSCHLAND, 20 April 1986, pp 3-4;

"Direktive des XI. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1986-1990" [Directive of the 11th Party Congress of the SED Concerning the 5-Year Plan for the Development of the GDR Economy 1986-1990] In: NEUES DEUTSCHLAND, 23 April 1986, pp 4-5.

#### (b) Computer Technology Program

Possible problems related to transfer and production in the area of circuit manufacturing will not remain without an impact on the manufacture of other hardware in the area of computers as well as measuring and process control technologies. In the area of the general-purpose computer (ESER computers), the activities of Robotron Dresden will be concentrated totally on the production of the new ESER computer EC 1056 (features include new circuitry, new operating systems). This system is a prototype of the so-called "series of six," more precisely, the developmental Series 3 of the ESER with a speed of about 538,000 operations per second (ESER system mix). The first reports regarding the new Robotron computer appeared in August 1984.(21) Since this computer as early as 1984 passed a series of tests before a panel of ESER experts, it was expected that it would be introduced at the Spring Fair in Leipzig in 1985. Possible technical problems were perhaps the reason that it was not to be seen at this fair, and also for the fact that relevant trade journals in the GDR subsequently failed to report on it. Not until the end of 1985 and in a publication in spring 1986 did it become known, based on brief reports, that the first systems of the EC 1056 had already been installed in such combines as Kabelwerke in Oberspree, for example. Contrary to general expectations, this EDP system was not introduced at the Leipzig Spring Fair in 1986. It is said that series production is supposed to begin before the end of the current year.

Neither in the press releases nor at the press conference held by the Robotron combine at the 1986 Leipzig Fair was it announced whether and to what extent the GDR will participate in the production of super-EDP facilities as described in the complex programme. Nonetheless, it can be assumed that there is a general intention, or obligation, to participate in this project. Since this project is to be realized by the year 2000, critical prerequisites for the construction of such facilities must be created in the GDR during the current 5-Year Plan period. As Gorbachov emphasized in his speech at the 11th Party Congress of the SED, it is not possible to imagine the future of the Soviet Union "without close collaboration with the GDR and the other brother countries."(22) Read between the lines, this means that the USSR does

not wish to stand alone in bearing the burdens associated with the complex program and that full support is expected particularly from the GDR in the area of electronics and automation as well.

An additional focal point for Robotron computer production focuses on systems of decentralized data technology, i.e., personal and desktop computers, office computers and basic computer systems. In addition to ESER computers (primarily EC 1056), these are to form a foundation for CAD/CAM. This was also repeatedly emphasized at the Party Congress.

#### (c) Production Automation

A clear increase over current production levels is among the primary objectives contained in the directive of the Party Congress for the 5-Year Plan 1986-1990. Closely linked to this is a reduction in manufacturing time and ultimately an increase in labor productivity. These objectives are to be met by means of the following:

- new generations of machines and equipment that are characterized by their reliance on microelectronics and

- functioning deliveries of replacement parts.

Machine tools and processing machines have been assigned a critical role in the solution of these and other tasks. By 1990, for example, this sector is to increase the number of machine tools equipped with microelectronic control systems to 80 percent.(23) By 1990, machine tools of this type, complemented by industrial robots and CAD/CAM workstations, are to be implemented, first for the development of automated manufacturing complexes and segments as well as processing centers. In the further stage of production automation, individual automation solutions are to be linked together in flexible manufacturing systems, leading in this way to "comprehensive automation." The production level that will thereby be achieved is to be characterized by new devices of measuring, testing and sensor technologies as well as by machines and devices driven by direct current. In addition to the machine tool and processing machines industry, heightened performance levels in the construction of automation facilities will also be necessary in the GDR in order for plan targets to be met. At the present time, the long-term efforts in the direction of automation go beyond the current 5-year plan period and are aimed at the realization of CIM solutions.

However, the GDR is only in the initial phase in its move to comprehensive production automation. The previous initial CAD/CAM solutions were realized without any kind of linkage to the existing technical information system and without interfaces to the administrative EDP.

#### (d) Perspectives On Electronic Telecommunication

About two years ago, the course was set in the GDR for the establishment of digital telecommunications networks as indicators of future telecommunications and communications systems. In line with international (Western) developments in this area, the party directive to 1990 calls for a "transition to digital communications for selected hardware and software complexes." Closely linked

to this development planning is the preparation of the integration "of previously independent and new services, such as speech communication, telecopiers, teletypes, data and image transmission, into a system with a significant impact on the national economy." (24) On the other hand, the directive did not emphasize the establishment of satellite systems, for which the production technology prerequisites necessary during this 5-year plan period would most certainly already have to be created as well in the electrical engineering and electronics combines, although this area was specially stressed in the complex programme. Seen in overall terms, the references made at the Party Congress and in the directive to the continued development of communications electronics contain only general formulations concerning planning projects; detailed data concerning possible stages, e.g. of the establishment of a public communications system and its linkage to individual systems, are missing.

#### (e) Planned Organizational and Applications Solutions

The implementation and creation of new organizational and applications solutions, but also requirements regarding the utilization of the new technologies are linked to the preparation of new production systems and computer systems. With regard to this, the following individual points could be mentioned:

- Implementation of a process-oriented information processing, i.e., data processing oriented to the workplace.
- Transition from batch processing to dialogue-processing (man-machine dialogue) by consolidating data acquisition and data processing.
- Linkage between computers, taking into consideration telecommunications components (digital technology), organization of local networks (e.g., for enterprises or ministries) and the creation of possibilities of accessing the public network of the GDR postal system.
- Adaptation of the existing database concept to the changed information technology framework: organization of centralized and decentralized data banks with the goal of implementing data storage that is as free as possible of redundancies. (25)
- Realization of integrated solutions, e.g.,
  - data integration via the realization of administrative flow-charts,
  - integration of text and image (integration of text, image and data processing) as well as,
  - integration of computer-assisted commercial data processing and production automation.
- The preparation of new user-friendly software solutions and software that allows for customization, in particular for workstation-oriented data processing and CAD/CAM.



--Organization of process flow of the new forms of process automation (in administration and production).

It is the declared long-range objective of the efforts being carried out by leaders of the Party and the economy in the GDR in terms of electronics and automation beyond 1990 not only to realize improved information services and data banks, but also to implement data access to the largest possible number of decentralized computer stations. Certainly, a computer-assisted and dialogue-oriented information system for the whole economy, which has the task of ensuring both management and planning as well as control of the execution of the plan by the central state managerial organs will form the basis for this.(26)

In order to be able to realize the intended innovation processes by means of the use of electronics and automation, a number of related demands has been made. In the future, among other things:

1. The "contractual relations of the combines with the Academy of Sciences and the universities" are to be expanded "in a major way";(27)
2. The basic research carried out by the institutes of the Academy of Sciences, at the colleges and universities as well as in the combine institutes, is to be directed, in keeping with established priorities, at the projects which were especially emphasized in the directive of the party congress regarding accelerated scientific-technological progress;
3. Existing scientific disciplines (such as socialist economic management or information science) are to contribute with sound accomplishments to the solution of new problems and
4. The innovation activities of the innovator and the [Fair of the Masters of Tomorrow] movements are to lead to a push ahead in rationalization.

#### 4. Conclusions

As a whole, the planned rates of increase and objectives are not to be regarded as unachievable even in view of the obstacles that can be expected in the areas of production and organization. Nonetheless, because of the present technology gap between East and West, the GDR will hardly be able to eliminate by 1990 the disparity which exists in the area of advanced technology, particularly with regard to the USA and Japan, but also in comparison with several Western European countries. Therefore, in the opinion of West German experts, a continuation of the time lag and a resulting further adaptation and reception of successful Western technologies and applications solutions is pre-programmed. Conceivable changes within the economic system of the GDR were not addressed by the SED Party Congress.

Since for the future it still cannot be expected that the GDR combines will enjoy real independence, but rather that the primacy of plan fulfillment will continue to hold sway, the GDR will continue to experience problems in the implementation of advanced technologies which in the general view of West German economists have their cause in the given economic system.

## FOOTNOTES

1. According to estimates from within the country, the GDR currently belongs to "the few countries in the world which in have the potential in important areas to develop and produce microelectronic components..." Quoted from: "Erfolgreicher Weg der Gestaltung der entwickelten sozialistischen Gesellschaft in der DDR, Zahlen und Fakten" [Successful Path to Shaping the Developed Socialist Society in the GDR, Facts and Figures]. Compiled by departments of the Central Committee of the SED and the State Central Administration for Statistics of the GDR, April 1986, p 32 (on the occasion of the 11th Party Congress of the SED).
2. ESER: acronym for "einheitliches System der elektronischen Rechentechnik" [Unified System of Electronic Computer Technology].
3. Leipzig Spring Fair as well as the CeBIT Fair in Hannover.
4. Cf. K. Krakat: "Flexible Fertigungssysteme und CAD/CAM Loesungen im Mittelpunkt des DDR-Angebots: Neues Comecon-Abkommen praegte Leipziger Messe" [Flexible Manufacturing Programs and CAD/CAM Solutions at the Core of the GDR Contribution: New COMECON Meeting Shaped the Leipzig Fair], in COMPUTERWOCHE, Munich, No. 21, 23 May 1986, pp 41-45.
5. Cf. K.C. Thalheim: "Aktuelle Funktionsprobleme einer zentral geplanten and gelenkten Wirtschaft im Spiegel der Diskussionen in der DDR" [Current Problems in the Functioning of a Centrally Planned and Steered Economy as Reflected in Discussions in the GDR]. In: "Stabilitaet im Wandel. Wirtschaft und Politik unter dem evolutionsbedingten Diktat. Festschrift fuer Bruno Gleitze zum 75. Geburtstag." Edited by Bodo G. Gemper, Duncker & Humblot, Berlin, 1978, pp 174-181; H. Leipold: "Eigentumsrechte, Oeffentlichkeitsgrad und Innovationsschwaeche--Lehren aus dem Systemvergleich" [Property Laws, Disclosure and Innovation Problems--Lessons from the Comparison of Systems]. In: "Innovationsprobleme in Ost und West. Schriften zum Vergleich von Wirtschaftsordnungen" Vol. 33, Stuttgart-New York 1983, pp 54-58 and ibid.: "Eigentum und wirtschaftlich-technischer Fortschritt" [Property and Economic-Technological Progress], J.P. Bachem KG Cologne, 1983, pp 123-128 as well as H. Vogel: "Vergleichende Analysen der Innovationskraft in West und Ost" [Comparative Analyses of the Capacity for Innovation in West and East] in: "Innovationsprobleme in Ost und West," op. cit. pp 217-221.
6. CAD: acronym for computer-aided design; CAM: acronym for computer-aided manufacturing.
7. RAM: acronym for random access memory.
8. A 64K RAM of Type SAB 6141 (Siemens) presently costs DM7. For an order of 100 items, the unit price is DM4.20. In comparison, according to unconfirmed information from the GDR, the 64K RAM chip U 2164 from the Microelectronics Combine costs approximately 800 marks (unit price).
9. Cf. "Kombinat Mikroelektronik Erfurt an das Zentralkomitee der SED. Eine Million Schaltkreise im Jahr des XI. Parteitages ueber den Plan" [Erfurt

Microelectronics Combine to the Central Committee of the SED. One Million Circuits over the Plan in the Year of the 11th Party Congress] in: NEUES DEUTSCHLAND 16 January 1986, p 3.

10. "Jeder an seinem Platz das Beste fuer unseren sozialistischen Friedensstaat" [Each in his Place is the Best for our Socialist Peace State], in: NEUES DEUTSCHLAND 7 January 1986, p 1.

11. W. Biermann: "Kurs der Hauptaufgabe zeigt seine Lebenskraft" [The Course of our Major Task Shows its Vitality], in: NEUES DEUTSCHLAND 18 April 1986, p 11.

12. Robotron collective to the CC of the SED: "Unser Arbeitsplatz--unser Kampfplatz fuer den Frieden" [Our Workplace--Our Battleground for Peace], in: NEUES DEUTSCHLAND 11-12 January 1986, p 3.

13. Cf. the extensive treatment of this topic in: "Kombinat Mikroelektronik Erfurt an das Zentralkomitee der SED. Eine Million Schaltkreise im Jahr des XI. Parteitages ueber den Plan," op. cit. p 1.

14. Cf. in detail "Von der 12. Tagung der Volkskammer der DDR. Gesetz ueber den Volkswirtschaftsplan 1986 vom 29 November 1985" [From the 12th Meeting of the GDR People's Chamber. Law on the 1986 Economic Plan of 29 November 1985], in: NEUES DEUTSCHLAND 30 November/1 December 1985, pp 9-11.

15. From January to April 1986, reports concerning this appeared almost daily in NEUES DEUTSCHLAND, the central organ of the SED.

16. Cf. "Zum XI. Parteitag der SED--Volkswirtschaft leistungstark und dynamisch. Einheit von Wort und Tat" [At the 11th Party Congress of the SED--A Strong and Dynamic Economy. Unity of Word and Deed], in: NEUES DEUTSCHLAND 8 April 1986, p 1.

17. Robotron press information: "Automatisierungstechnik fuer kontinuierliche und Fertigungsprozesse--CAD/CAM" [Automation Technology for Continuous and Production Processes--CAD/CAM], p 1, Leipzig Spring Fair 1986. CIM: short for "computer integrated manufacturing," is the expression for the integration of CAD/CAM, systems of production planning and steering (PPS), flexible manufacturing systems (including industrial robotics etc.) as well as other computer-assisted technologies. According to the unanimous opinion of West German experts, CIM presently represents a "conceptual model" for the information technology infrastructure within an enterprise. OEM: acronym for original equipment manufacturer, i.e., the manufacture of devices which are to be built into other systems.

18. Offers from the Robotron combine at the Leipzig Spring Fair in 1986.

19. Cf. "Bearbeitungszentren Fertigungszellen Flexible Fertigungssysteme--ein zukunftsorientiertes Angebot" [Treatment Centers of Manufacturing Cells for

Flexible Manufacturing Systems--A Future-Oriented Program], in: DIE WIRTSCHAFT, Leipzig Spring Fair edition 1984, p 71. Also K. Krakat: "Technologiefortschritt durch Elektrotechnik und Elektronik," op. cit., pp 94-96.

20. This also concerns particularly the production of surface-mounted components (SMD or surface mounted devices), production of which has still not begun at the Microelectronics Combine, in comparison with Siemens, for example. These (passive) components include capacitors, resistors and inductances [sic], which are mounted by special automatic devices without connecting wires in a space-saving way directly on the surface of the printed circuit board. Regarding the objectives, cf. also "Direktive des XI. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der volkswirtschaft der DDR in den Jahren 1986 bis 1990," op. cit. p 3.

21. Cf. also Ch. Weber, W. Lampenscherf and K.H. Homilius: "Das Modell EC 1056" in: RECHENTECHNIK/DATENVERARBEITUNG No 8, 1984, pp 5-7.

22. M. Gorbachov: "Wir sind treue Freunde und Verbueundete der SED, der DDR, und wir bleiben es fuer alle Zeiten" [We Are true Friends and Allies of the SED, of the GDR, and We Shall Remain So for All Time To Come]. Speech given at the 11th Party Congress of the SED. In: NEUES DEUTSCHLAND 19 April 1986, p 3.

23. Cf. "Direktive des XI. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1986 bis 1990," op. cit. p 6.

24. "Direktive des XI. Parteitages zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1986 bis 1990," op. cit. p 6.

25. In the sense of verbosity, superfluity. One speaks of redundance when in linguistic formulations more symbols are used than are necessary for the transmission of information.

26. Similar to the economic information system VIS which was planned as early as the middle of the 1960's, but never implemented.

27. "Direktive des XI. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1986 bis 1990," op. cit. p 4. Cf. also supplementary information in H.F. Buck: "Finanzpolitisches Programm und Staatshaushalt der Regierung der DDR fuer das Wirtschaftsjahr 1986" [Financial Policy Program and Budget of the GDR Government for Fiscal Year 1986], Analysen und Berichte des Gesamtdeutschen Instituts, No. 19, 1986, pp 14-16.

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## DETERMINATION OF PRICES IN STATE AGRICULTURAL ENTERPRISES

Bucharest REVISTA ECONOMICA in Romanian No 14, 4 Apr 86; No 20, 16 May 86

[Article by Oprea Parpala, Ion Dincu, Radu Voicu, Toader Moga, and Emilia Parpala: "The Economic Substantiation of the Zoning of the Production Prices in the State Agricultural Enterprises"]

[4 Apr 86 pp 12-13, 15]

[Text] The achievement of a new quality in the economic activity in agriculture--especially in its state sector--is decisively conditioned by the matter of showing a profit and increasing the profitability for all products and in all production units. A new quality in the economic activity in agriculture necessarily presupposes full economic self-administration at the level of each agricultural unit, without which it is not possible to achieve true self-management, which strengthens the unit's economic autonomy, as a component and inseparable part of the principle of democratic centralism in the planned management of the entire national economy. Pointing out that the new economic and financial mechanism must combine socialist ownership and the socialist mode of production into a whole with a broad initiative and material encouragement of the masses, Comrade Nicolae Ceausescu stated at the 13th party congress that it is necessary "for us to act as steadily as possible to base all economic and social activity on the principle of self-management and self-administration, doing everything so that each unit may obtain continual growth in economic efficiency and in profitability."

The basic motivation for the economic mechanism results from the idea that the socialist society can be developed only on the basis of high efficiency and profitability in all fields. Therefore, the matter of improving the new economic and financial mechanism and operating it in the best way constitutes a permanent concern of all workers--in the area of practice or theory--in the field of managing the national economy. However, the implementation of this postulate of economic development requires a correct understanding of the role of the economic laws, with a view to creatively applying them to the concrete conditions of Romania's economic and social development in the new stage.

In this context, along with the application of other objective laws, there is a great importance attached to applying the law of value to our socialist state agricultural economy, with a view to improving the socialist mode of



production and the social production relations and forces. The conscious application of the law of value (eliminating its voluntarism as well as its self-action) represents a basic requirement of the new economic mechanism.

#### Price and Economic Self-Administration

One of the key factors (besides the production cost) through which the basic requirement in the application of the new economic mechanism--the matter of showing a profit and increasing the profitability of agricultural production--is the price (production, contracting, or purchase price). The price is what links the production expenses and the profitability of production, serving as a condition for materially encouraging the agricultural producers to increase agricultural production through the rational, ever better utilization of all production resources, natural, material, human, and financial.

As a monetary expression of the value of the agricultural products that enter into the exchange of activities in the Romanian national economy, the price--through the functions that it fulfills--has a decisive role in the proper functioning of the economic mechanism, based on the economic self-administration and the self-financing of the socialist agricultural units.

The consistent promotion of the principle regarding economic self-administration at the level of each agricultural product and each socialist agricultural unit strengthens the role of prices in the field of covering and recovering the production expenses, as an essential, sine qua non condition for encouraging the agricultural producers. The recovery of the production expenses is the primary condition for any economic activity in agriculture, because, in its absence, not even simple reproduction can be secured, with the agricultural units having to consume their economic substance itself. In proportion to the development of the national economy and the growth of the country's financial power, the remunerative character of the prices of agricultural products has been strengthened, through the closer correlation of them with the level of the expenses necessary under normal production conditions. It should be borne in mind that the prices of the basic agricultural products for carrying out the food self-supply program in accordance with the principles of scientific, rational nutrition had bigger increases during the last rise in prices.

While self-administration--concretized in offsetting the expenditures made in order to obtain the products with the incomes obtained from the realization of the products sold--entails the obligatory recovery of the production expenses, the self-financing of the economic activity at the level of each agricultural enterprise requires--just as obligatorily--the obtaining of profits for attaining the accumulations needed in order to resume agricultural production on a wider and wider scale. For precisely this reason, profit has become the chief indicator of economic efficiency in agriculture, and profitability--along with quantitative and qualitative growth in agricultural production--has become the final objective of any agricultural activity. Therefore, through its level, the price (production, contracting, or purchase price) is called upon to ensure not only the recovery of the (standardized) production expenses but also a rate of profitability of production by means of which it is possible to achieve a rate of accumulation in accordance with the rate and

proportions of the process of expanded reproduction in agriculture as a whole and at the level of each agricultural unit.

Consequently, the implementation of the new economic mechanism in the direction of meeting its main requirements--self-financing and economic self-administration--entails the strengthening of the role of the prices for the purchase of agricultural products by the state, as an important factor in the planned guidance of socialist agriculture.

#### The Peculiarities of Price Formation in Agriculture

In agriculture, however, the full manifestation of the role of prices in applying the new economic mechanism is peculiar, due to the specific forms that are taken by the mechanism for forming the value and thus the price in socialist agriculture. In agriculture, as in the other branches of the national economy, the value is determined by the socially necessary cost for producing the respective product. With one adjustment, however: In agriculture, the level of the socially necessary cost is determined by that achieved on the poorest land--of course, under the conditions of a rational level of technical equipping, of organization of production and labor, and of administration of all production assets (including the land).

This adjustment, peculiar to agriculture, is conditioned by the territorial limitation of the land and by the qualitative variation in it on a territorial basis as a chief means of production in agriculture. The territorial limitation, particularly of the best land, under the conditions of the necessity of securing levels and assortments of agricultural products that meet the consumption needs of society, dictates the cultivation of the poorer land as well, including the newly recovered, formerly unproductive land. However, with the same level of production expenses, lower yields are obtained on this land, with growth in them requiring an even bigger increase in the production expenses per hectare. The result: In both cases, the production costs are higher on the poorer land (we repeat, with the other technical and organizational conditions being equal). Since the amount of agricultural products obtained on the poor land (set, as a rule, through the plan target) is just as necessary to society as that obtained on the better land, then the (higher) production expenses for the poorer land also gain the social recognition that turns them into a regulator of the socially necessary costs. Under these conditions, in agriculture there arises the (paradoxical) situation that the social value of the agricultural products (taking as a basis for calculation the socially necessary costs determined by the production expenses on the poorest land, whose products are just as necessary to society as those from the better land) may be higher than the sum of their individual values. The explanation: The social value of the agricultural products also includes a so-called "false social value" in the form of differential rent.

What happens with the mechanism for setting the prices of agricultural products. If we apply the general scheme according to which the price is the monetary expression of value, then the single price is determined by the agricultural product's social value, which, we repeat, also includes the "false social value" for the amount of product obtained on the better land. The



consequences: a) the rising of the prices of agricultural products, b) the artificial growth of monetary circulation in the country, and c) the adoption of financial-policy measures (especially through the income tax) by means of which the state acquires this false social value and then uses it in the interests of the entire society. However, in addition to the drawbacks (quantitative ones, but ones that can have negative effects of a qualitative nature) that the use of this factor has, another artificial rise in monetary circulation in the country may arise.

Consequently, for setting the prices for the purchase of agricultural products by the state from the agricultural producers, the value has just an orientative character, only for setting the prices of the agricultural products obtained on the poorest land. The interests of the balanced development of the national economy and of the harmonization of the relations between the producers and the consumers of agricultural products require that the prices of agricultural products have as a basis for calculation the (standardized) zonal production costs. Since the (social) value can only be a single one, it is not possible to accept the thesis regarding the existence of zonal values in agriculture, but only of zonal costs with which the price level, varying on a territorial basis, is correlated.

#### The Necessity of Zoning the Prices of Agricultural Products

For the main vegetable products (wheat, rye, grain corn, sunflowers, and greens), which cannot be obtained only on good land in the amounts that would meet the needs of the national economy, the contracting prices are varied according to zones. Despite the drawbacks that still persist in determining the number and territorial extent of the price zones and in more sensibly correlating the zonal price with the zonal production cost, the system of territorial variation in prices has proved to be an effective factor for growth in agricultural production in the proportions and assortments that would suffice for the country's self-supply.

Nevertheless, the system of zonal prices is not practiced in the state sector of agriculture. Even in the latest regulations on the contracting for and purchase of agricultural products, the production prices are single ones on a territorial basis. However, although the differences in the natural and economic production conditions among the agricultural units on a zonal basis are less acute in the case of the state agricultural enterprises (since they are not found throughout the country), the failure to take these differences into account is nonetheless a reflection of keeping in practice an old theoretical thesis regarding the profitability of a superior type obtained in the system as a whole and not at the level of each agricultural unit. Such a practice corresponded to the old economic and financial mechanism, in which the system of state subsidies, of the coverage of the so-called "planned losses" by the state, had become a customary "factor" in economic management of the state agricultural enterprises. In favor of this practice there is still cited the idea that once the entire output obtained (minus the production assets) is acquired by the state, which, in its turn, bears all the production expenses, the acquisition (production) price is no longer important.

However, under the new conditions, those of the new economic mechanism, it is clear that such a practice flagrantly violates the principles of the self-administration and self-financing of each economic unit, including each state agricultural enterprise. Overall profitability is not sufficient for the rational utilization of all production resources existing on a territorial basis, but profitability at the level of each state agricultural unit, whose economic activity must be performed in accordance with the requirements of the new economic and financial mechanism, like that of any other economic unit (be it even the neighboring agricultural productive cooperative).

The further use of the single (average) production price is equally discouraging both for the state agricultural enterprises located under the best production conditions and for those located on the poorer land. For the first category of units, which obtain higher yields per hectare with lower production costs, the single price (which covers the production expenses, offering the possibility of also obtaining big profits) becomes discouraging with regard to the complete, ever better utilization of the optimum production conditions, limiting the level of production as well as of the profits that can be obtained. For the second category of state agricultural units, the single price has the same discouraging action, with even more obvious negative effects, since whatever efforts may be made by the staffs of working people to whom the rational administration of these production resources is entrusted, they cannot obtain, as a rule, production and financial results comparable to those obtained by the state agricultural units in the first zone.

Consequently, the rational zoning of production prices (and of contracting and purchase prices for agricultural production cooperatives and individual producers) is an important problem, with significant effects on the rate of progress of the new agrarian revolution in Romania, which has as a chief objective the obtaining of record yields through the intensification and complete utilization of the agricultural production resources in all zones of the country. For precisely this reason, the solving of it, by generalizing in practice a mechanism for zonal prices, is an urgent matter, since it is closely connected with the factors for material encouragement of agricultural producers proposed by the documents of the 13th party congress and pointed out in the report presented at this congress by the secretary general of the party, Comrade Nicolae Ceausescu. The conscious management of the process of applying the new economic mechanism and the general economic laws (particularly the law of value) requires the further improvement of the system of prices of agricultural products as an expression of the strengthening of the leading role of the party, of our social state, in carrying out and implementing successfully the new agrarian revolution in Romania.

[16 May 86 pp 10-11]

[Text] Through the high percentage that they have in the production structure and in the structure of the cultivated areas in the state agricultural enterprises, the wheat and grain-corn crops are of particular economic interest, since the economic and financial results obtained for these two main crops influence both directly and indirectly (through animal husbandry) the economic and financial situation of the state sector of our agriculture.

## The Profitability of Wheat Production

In the 1982-1984 period, the state agricultural enterprises [IAS's] furnished annually a large amount of wheat to the state's centralized supply of agricultural products, as a result of which they obtained big monetary incomes, attaining a rate of profitability of 27.4 percent. Such an economic and financial situation reflects the action of a balanced economic and financial mechanism. The (average) production price not only covers the expenses but also offers the possibility of obtaining profits at a rate of profitability considered optimum for meeting each agricultural branch's needs for expanded reproduction. At the same time, the situation of the profitability in wheat production on a territorial basis, according to counties, shows that there still are big reserves for improving the mode of operation of the economic mechanism in at least two main directions: 1) the zonal variation of prices, through a close correlation of the production price with the production cost; and 2) the reduction and rationalization of the production expenses at the wheat-raising units which are located in favorable zones (on some of the best land in the country) but which have a negative or shaky financial situation.

The possibility and especially the rationality and thus the necessity of zonal variation in production prices, to encourage all units to increase the wheat yields per hectare, follow from the comparative analysis itself of the final results: The overwhelming majority of all the wheat-raising IAS's are profitable, with 102 of them having a rate of profitability of up to 30 percent, while in 66 IAS's the rate of profitability in wheat production exceeds 50 percent. In nine IAS's (six of which are in Banat), the rate of profitability in wheat production exceeds 100 percent. It is clear that under such conditions it is not possible to speak of consciously using the law of value in the direction of materially encouraging all agricultural producers in all wheat-producing zones to meet the needs of the national economy: While for some zones the average (single) production price does not yet cover the expenses, for others it is unjustifiably high, giving rise to excessive profits, which can "lull to sleep" the concern of the producers for utilizing the production resources as intensively as possible, to the point of obtaining record yields.

At the same time, one's attention is drawn to the fact that in some counties, known for the quality of the soil and, in general, of the soil and climatic conditions favorable to raising wheat, the financial activity for this crop ends with a marginal rate of profitability (at most 10 percent) or some perform an unprofitable activity for this crop. Such is the case of three IAS's each in Braila and Olt Counties, four each in Constanta, Dolj, Ialomita, and Giurgiu Counties, six in Calarasi County, and eight in Tulcea County. Consequently, the intensification of the action of the economic mechanism's factors for rationalizing the production expenses per hectare, along with applying technologies that ensure the obtaining of yields corresponding to the level of the expenses, represents an acute imperative in the field of raising the economic efficiency in wheat production in the state agricultural enterprises.

## The Profitability of Grain-Corn Production

Under the current conditions, the average single production price of grain corn covers the expenses, but the rate of profitability obtained does not meet

the needs of the process of expanded reproduction in this branch. These conclusions are dictated by the analysis of the profitability in grain-corn production on a territorial basis. The intensification of the factors for operating the economic mechanism must be aimed in the following main directions:

a) The substantiated establishment of the production prices of grain corn on a territorial basis, taking into account the necessary zonal level of production costs. It is clear that the lack of profitability in corn production in a number of corn-raising units cannot be explained only by organizational and management deficiencies, it also having reasons of an objective nature, caused by the way in which the action of the (objective) law of value is used in the activity of economic self-management. In this context, it may seem that it would also be necessary to increase the prices paid by the state for the output of grain corn furnished to the state supply, which would also lead, implicitly, to the growth of the average production price. We feel that, in reality, this situation will not arise, considering the big reserves that exist for the reduction of production expenses.

b) The reduction of production costs, especially in the main grain-corn-raising zones, which also make the biggest contribution to the state's centralized supply. It should be borne in mind that, in most cases, it is a question of the irrigated cultivation of corn--for which, thus far, it has not been possible, in all cases, to obtain yields per hectare corresponding to the additional investments made in order to prepare the land. Consequently, the main problem remains that of substantially increasing the yield per hectare under irrigated cultivation through the rational utilization of the production resources favorable to obtaining record yields.

The presentation and analysis of the economic and financial situation of wheat and grain-corn production in the state agricultural enterprises in the 1982-1984 period are revealing as to the territorial differences (sometimes considerable) in the level of the financial results, which cannot be ascribed only to the manner of administering the production assets. The territorial variation in the economic and financial results comes particularly from the variation in the natural production conditions, represented mainly by soil quality. Nearly every state agricultural enterprise has farms scattered over a wide area, containing land of differing fertility. However, the calculation of the average production cost for an enterprise only causes these territorial differences to become blurred. However, this means that, within the framework of the economic autonomy given to the agricultural units on the basis of the principle of self-management, they may have the attribute and capability of varying (where necessary) the average zonal price for an enterprise, in prices according to production microzones, which would stimulate equally all farms producing the same product to utilize fully and better the soil conditions for production, creating equal pay conditions for equal working conditions.

#### The Zonality of Production Costs

The level of the production cost--like that of the yield per hectare--is the result of the interaction of the objective and subjective factors of agricultural production. Among the objective factors, the soil and climatic ones are



situated in the forefront. Consequently, as a rule, there is an inversely proportional relationship between the yield per hectare and the production cost. The zonality of production costs, as part of a well-oriented policy on prices, constitutes the basic element for the zoning of production prices. The policy on production prices, within the framework of the current economic and financial mechanism, must provide the financial means for the self-financing of the entire production activity at the level of each production branch, regardless of the degree of favorableness of the soil and climatic conditions.

In nearly one-fourth of all the wheat-raising state agricultural units, the level of the production cost exceeds that of the basic production price. It should be borne in mind that these units are concentrated in the majority of the counties in the southern part of the country. The fact that in the same county there are units with different levels of production costs shows that the zoning of production prices cannot have an administrative character, that the price zone cannot be the same as the administrative unit (the counties).

The state agricultural enterprises with the lowest production costs are located in Arad, Timis, and Satu Mare Counties. Most of the units that are in the next bracket of production costs for wheat are located in Timis, Bihor, Olt, Arad, Mures, Braila, Buzau, and Dolj Counties. The results in the counties of Constanta, Timis, Sibiu, Calarasi, Teleorman, Ialomita, Galati, Braila, Giurgiu, Dolj, Prahova, Cluj, Mures, Iasi, and so on are characteristic of the highest bracket of production cost (close to the basic production price).

In grain-corn production, we find the lowest production costs in two counties in the western part of the country--Timis and Arad--which contain nearly half of the state agricultural units that obtain such low costs for grain corn. The rest of the units in this situation are spread among nearly all the counties of the country, there being seen, nevertheless, a certain "anomaly" in the sense that 11 of them are in Sibiu and Bistrita Counties. This shows that the rational administration of production resources permits the performance of a profitable economic activity even in zones with less favorable land.

The largest number of grain-corn-raising units, located, as a rule, in the zones with the best land, belong to the next group of production costs, found nonetheless under the limit of the basic production price: Braila, Constanta, Calarasi, Ialomita, Teleorman, Olt, Dolj, Arad, Timis, and Bihor Counties alone contain half of the grain-corn-raising units that obtain such production costs. This situation confirms, once again, the law of the zonality of production costs.

The next group of production costs is the group of "paradoxes" (also found--in smaller proportions--in wheat production), since the number of grain-corn-raising units located in zones with good land or even some of the best land for raising grain corn are predominant. Thus, two-thirds of the grain-corn-raising units belonging to these production-cost groups are concentrated in the counties of Constanta, Calarasi, Ialomita, Dolj, Teleorman, Timis, Tulcea, and so on. It should be noted that one-third of the grain-corn-raising units belonging to this group are found in Calarasi, Constanta, and Ialomita Counties alone, where the biggest areas planted with corn--under irrigation--are

found. All these things lead us to the conclusion that for the great majority of the grain-corn-raising units in this group, not the amount of the production price (which can be kept within the current limits) but the reduction of the production cost, through the more rational use of production resources (including water) in the direction of both increasing the yield per hectare and reducing the absolute level of the production expenses per hectare, a reduction for which there are sufficient reserves, is decisive for showing a profit in the production of grain corn.

As a rule, state agricultural units located on poor land, for which a suitable correlation of the production price with the production cost is required in order to show a profit in grain-corn production, belong to the higher production-cost groups. But here too there are a number of units that squander a large amount of production resources, so that the actual production expenses far exceed their objective, standardized level. Such is the case of a not at all negligible number of grain-corn-raising units in the counties known for the favorableness of the soil and climatic conditions as well as for the level of intensification of the cultivation of corn (with irrigation), such as Constanta, Giurgiu, Calarasi, and others.

#### Principles of Economic Substantiation

In the scientific economic substantiation of the necessity, possibility, and practical utility of zoning the production prices of wheat and grain corn in the state agricultural enterprises, we believe that the following two principles must be taken into account:

a) The matter of getting all the wheat- and corn-raising state agricultural enterprises to show a profit, without changing the sum of the prices, so that the state's expenditures for completing the central supply of agricultural products would remain constant (for the same quantity of wheat or grain corn furnished by state agricultural enterprises). This means that the increase in the production prices in certain zones would be done in conjunction with the reduction of the production prices in the zones in which they lead to the attainment of excessive profitability. Only the establishment of an equal or similar standardized rate of profitability for all the production zones can stimulate the state agricultural units to increase the yields per hectare and to reduce the production costs, in order to increase the profits obtained beyond the plan, from which the direct producers of the agricultural products could also benefit.

b) The setting of the production price on the basis of the objectively necessary (standardized) production cost, plus the optimum rate of profitability, which would meet the needs for accumulation with a view to improving the material production base for steadily increasing the yield per hectare. Considering the level of the yields per hectare for wheat and grain corn set for the state agricultural enterprises for 1990, under the conditions of constancy in production costs, we feel that an average annual rate of profitability of 30 percent would be sufficient to meet the additional needs required for increasing the yield per hectare.

In accordance with these principles, we propose four zones of production prices, depending on the level of the production costs.

For the cultivation of wheat, the state agricultural units in the fourth production-cost zone, raising wheat on some of the best land in the country (in the counties of Calarasi, Ialomita, Braila, Constanta, Giurgiu, etc.), must be put in the third production-price zone, with the matter of showing a profit being accomplished exclusively through the reduction of production costs, through the rational organization of production and labor, and through a big increase in labor productivity.

In the cultivation of grain corn, in the third production-price zone, the attainment of the optimum rate of profitability in the state agricultural units located on the best land--particularly under irrigation--would also be done on the basis of reducing the production costs, now at an excessively and unjustifiably high level.

In the fourth zone, even for the units at which the production cost is at the highest level, considering that the majority of them use some of the best land in the country, they can--through the rational administration of production resources--substantially reduce production costs, to the point of achieving an optimum rate of profitability.

It could be that the sum of the new production prices would be higher than the sum of the old prices. More than that: In some cases, the zonal production price of grain corn is higher than that of wheat. But, if we bear in mind that the new sum of the production prices of wheat is lower than the previous one, the transfer of incomes from the cultivation of wheat to the cultivation of grain corn does not affect in any way the interests of the national economy (with the expenditures for purchasing wheat and corn remaining relatively equal) but stimulates the state agricultural enterprises to increase the production of grain corn, so necessary for the balanced and intensive development of agriculture. As a matter of fact, the importance of reducing the production expenses in agriculture is again being stressed by the secretary general of the party, Comrade Nicolae Ceausescu, who, at the Expanded Plenum of the National Council of Agriculture, the Food Industry, Silviculture, and Water Management on 12-14 February of this year, stated that "we have decided to revise and set norms for each activity, as well as for the expenses in agriculture. It is absolutely necessary for us to radically reduce the production expenses and the material expenditures and to secure the growth of the profitability and economic efficiency in agriculture, this also having in view the corresponding growth of agricultural production!" The new regulations stipulated in the Decree of the State Council on the Granting of Monetary Advances to the State and Cooperative Agricultural Units, to the Members of the Agricultural Production Cooperatives, and to the Individual Producers That Contract To Furnish Agricultural Products to the State Supply, and the Granting of Loans for Production Activity also go along this line.

12103

CSO: 2700/204



## STATE OF WESTERN MILITARY-INDUSTRIAL COMPLEX EXAMINED

Sofia NARODNA ARMIYA in Bulgarian 3 Jun 86 p 4

[Article by Ivan Undzhiev: "Industry: The Future of West European Weapons: "Made in the USA"]

[Text] Success in the struggle for a lasting peace and security throughout the world depends both on suspension of nuclear testing and reduction and elimination of mass destruction weapons, and also on decrease in the volume of non-nuclear weapons, or, as they are still called, conventional weapons. The Soviet Union has always set an example of an integrated approach to disarmament questions. In the most recent peace initiative advanced by Mikhail Gorbachev in his address to the 11th Congress of the German Socialist Unity Party as a logical addition to the comprehensive program proposed by the Soviet side for nuclear disarmament, special attention was also devoted to the conventional weapons deployed on the continent of Europe. The proposed reduction of weapons of this type contrasts with the Western position. The West is allocating increasing amounts of funds for development and production of the most modern weapons and combat materiel.

According to the "Rogers Plan" and the "second echelon strike doctrine," the NATO countries are to try to increase the striking power of their conventional forces. The quality of the scientific and industrial potential available to them is of great importance in reaching this goal. And since in the last analysis the production and marketing of weapons is an extremely profitable business, we are witness to a number of contradictions arising between the capitalist countries. The most striking contradictions are the one arising in relations between the United States and its West European partners.

The "Westland affair," which agitated political life in Great Britain, possibly marks a new stage in the merciless battle being waged by West European arms manufacturers. The stakes are as simple as they are vital. It is a question of survival of the West European armaments industry over the next decade, and in a broader sense also of the extent to which Western Europe is itself capable of producing the war materiel it needs.

A glance at the recent past reveals that war-related industries experienced unprecedented growth during the 1970's. Many countries not only greatly exceeded their prewar production, but even succeeded in ranking themselves immediately behind the United States in exports of weapons and combat materiel. Two factors made the greatest contribution to this situation.

The first was protectionism, which became an integral part of the policy of the ruling bourgeois governments. However, it also caused NATO some discomfort, exemplified by the fact that the member countries were outfitted with 27 types of combat aircraft, seven types of tanks, 22 types of antitank weapons, etc., which in many instances use different ammunition, and which also, of course, require different spare parts. The second factor was represented by the large-scale deliveries of modern weapons and equipment to countries outside the NATO area, especially in the Near and Middle East. The exports were made up both of national products (France, in second place behind the United States in weapons exports, found a ready market for its Mirage airplanes and AMX-30 tanks) and of products resulting from multinational cooperation, such as the French-West German Hot and Milan missiles, the Jaguar combat aircraft, and the French-British Puma helicopters.

Now, however, the situation is quite different. The Third World market is supersaturated with the most modern weapons, and the drop in the price of petroleum has made transactions, such as that with Saudi Arabia for delivery of Tornado airplanes (a German-Italian-English product), merely a pleasant memory of times gone by. Nor is the fact to be underestimated that so-to-speak "local" competitors such as Israel and Brazil have been very successful in marketing their lethal commodities.

And since scientific research work in the weapons sector in the developed West European countries is generally financed with proceeds from exports, specialists believe that such activities have more or less come to a standstill in this area. This will result in the future in a considerable lag behind the United States, where nearly 3 percent of the gross national product is allocated for research work. The hundreds of billions of dollars invested by Washington in this area, half of this amount disbursed directly by the Pentagon, are two-fifths more than the amount invested by all of Western Europe for this purpose. For the sake of comparison, consider that the space research budget of the United States (two-thirds of which is also administered by the Pentagon) is as large as the entire military budget of France, for example. Or consider the 26 billion dollars budgeted for the so-called strategic defense initiative, which is nevertheless a small item in the Pentagon budget. This amount represents 10 years of military research activities in France or 40 years in the Federal Republic of Germany.

It would be logical under these circumstances to expect closer cooperation among the West European countries which manufacture weapons and combat materiel. But the differences among them obviously always gain the upper hand, and the period extending from the end of the last decade to the beginning of the current one was characterized by failure of many joint projects, as, for example, the much publicized French-West German tank or the Eurofighter rejected by Dassault or the French-West German military satellite project abandoned by Bonn, and even the plans for development of the European Hermes spacecraft, the future of which remains cloudy.

Frightened by the fate of Westland, West European companies are becoming more oriented toward cooperation with overseas partners. The membership of many NATO countries in the International Standards Organization favors this process. The huge American firms AT&T and IBM do not turn down advantageous cooperation. The French electronic giant Thomson has already sold the rights to the RITA supersonic system to the United States; the SNECMA company and

General Electric have signed an agreement on manufacture of new engines, etc. At the same time, a tendency toward enlarging the scale of production to make it possible to withstand the heavy American competition is observed on the national scale. For example, in the Federal Republic of Germany the automotive manufacturer Daimler Benz has absorbed engine manufacturer MTU, the electronic firm AEG, and aircraft designer Dornier, and consequently has become a major munitions manufacturer.

In one way or another, the landscape in Western Europe in the area of weapons and combat equipment production will become more American. This means that it will be easier for Washington to impose its will, forcing its NATO partners to undergo faster militarization and thereby erecting new barriers to peace and security in the world.

6115

CSO: 2200/132

## AFTERBURNER IGNITION PROBLEMS IN 'CLASS 37' JET ENGINES

Warsaw PRZEGLAD WOJSK LOTNICZYCH I WOJSK OBRONY POWIETRZNEJ KRAJU 1n  
Polish No 5, May 86 pp 36-40

[Article by Major Marek Wołoszynski, MSc (Eng): "Damages of Control Device Initiating Ignition in 'Class 37' Jet Engines"; first five paragraphs are a summary]

[Text] The components of an aircraft turbine engine whose technical condition has to be evaluated during diagnostic tests in most cases are inaccessible for direct testing. For this reason during diagnostic tests one measures the indirect (control) parameters and primarily the parameters of dynamic processes of the physical effects which characterize the operation of the jet engine.

A jet engine combined with a control system constitutes a complex where the flow of dynamic processes is described by a control (regulation) program and by the design properties (of the control object).

The design solutions of control devices may vary; theoretically, there may be as many of them as there are variables to be regulated or regulating factors.

The function of control systems is not only to achieve the specified values of regulated parameters but also to prevent unsafe conditions in terms of endurance and serviceability.

In case of violation of specified regulator characteristics or their improper technical condition, the course of the transient process differs significantly from the optimum.

An example illustrating the relationship between the technical conditions of an object and the variation course of control parameters is the result of a study of the technical conditions of a control system regulating the operation of a two-swirler afterburner of "class 37" turbine jet engine. The flowchart of the system is given in fig. 1. The design of the system allows maintaining the optimum course of pressure of combustion products  $p_4$  and combustion product temperature  $T_4$  behind the turbine by automatically

correlating the ignition and the pressure rise of fuel  $p_d$  in front of the injectors in the afterburner collector and the increase in the cross-section of the engine nozzle  $D$ . In this way the optimum conditions for the afterburning initiation are secured.

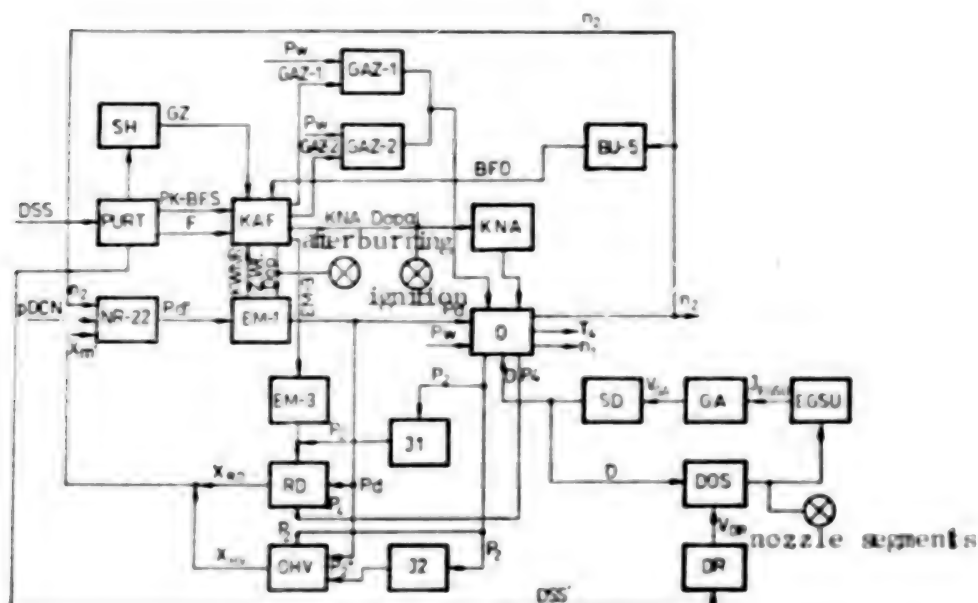


Figure 1. The flowchart of the afterburner system of engine class 37: O - control object (turbine jet engine); NR-22 - afterburner fuel pump; PURT - control assembly of operation cycles of PURT-1FT engine; KAF - automatics assembly of afterburner KAF-13D; BU-5 - engine automatics assembly; KNA - ignition coils; EM-1 - electromagnetic valve of afterburner activation; EM-3 - valve of additional lowering of air pressure  $p_2'$ ; RD - afterburner pump regulator; OHV - altitude-speed limiter; J1 - control needle 1 ( $p_2'$ ); J2 - control needle 2 ( $p_2''$ ); SD - mechanical system controlling the segments of engine nozzle; GA - GA-164 valve controlling the nozzle segments of the engine; EGSU - electrohydraulic device controlling the engine nozzle; DOS - feedback system sensor; DR - potentiometer sensor; SH - hydraulic decelerator; GAZ-1 - gas unit 1; GAZ-2 - gas unit 2.

• The failure-free operation of ignition and stability of fuel burning process in the afterburner depend primarily on the pressure level of combustion products  $p_4$ . This pressure affects the afterburner pump regulator and increases or decreases the supply of fuel  $p_d$ . A drop of combustion product pressure  $p_4$  behind the turbine, e.g., because of nonignition of fuel in the afterburner or in case of an open engine nozzle (a damage of relay N of automation unit of afterburner KAF-13D, fig. 2) will cause a larger pressure

drop on the turbine and, as a consequence, an increase in the moment of rotation. The rotation speed regulator of low-pressure propellor (WNC- $n_1$ ) will reduce the output of fuel  $p_w$  in the auxiliary collector of the main installation and lower the combustion product temperature  $T_4$  behind the turbine. The afterburner pump regulator will increase the output of the fuel  $p_d$  proportionally to the actual pressure  $p_4$ , but no ignition of the fuel will take place because of the damage to electric unit of afterburner ignition. The afterburner will not function. The values of the control parameters of the engine being recorded ( $n_2$ ,  $T_4$ ,  $p_w$ ,  $p_4$  and  $p_2$ ) become reduced.

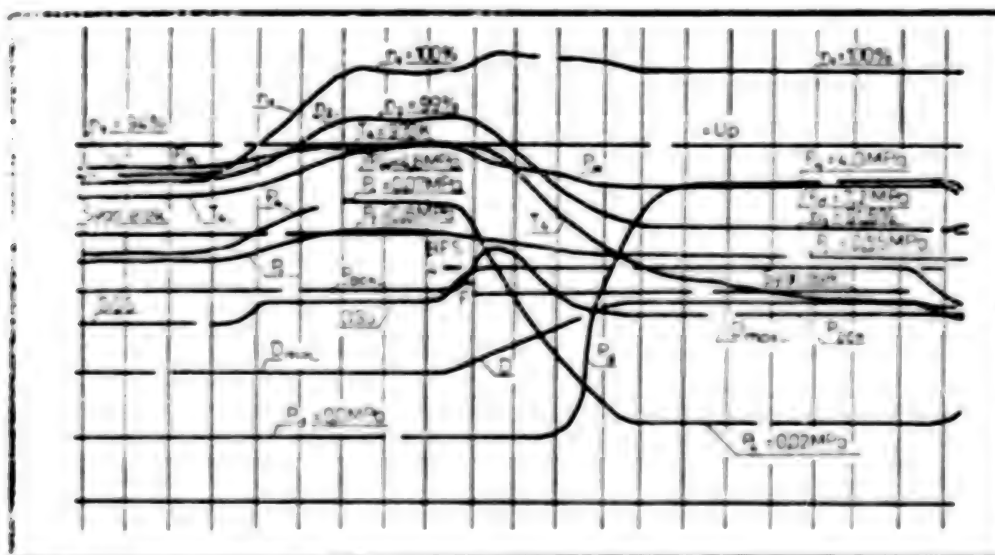


Figure 2. Course of the process of afterburner activation in case of damage of afterburner fuel ignition unit:  $n_1$  - rotation speed of low-pressure swirler [WNC];  $n_2$  - rotation speed of high-pressure swirler [WNC];  $p_w$  - fuel pressure in auxiliary collector of main installation;  $p_{DCN}$  - fuel pressure behind the auxiliary pump DCN-13DT;  $T_4$  - combustion product temperature behind the turbine;  $p_4$  - combustion product pressure behind the turbine;  $p_d$  - fuel pressure in afterburner collector;  $p_2$  - air pressure behind the engine coupling;  $D$  - diameter of jet nozzle;  $DSS$  - position of the engine control lever;  $U_p$  - current intensity; Sygn. elek. - electric signals of engine automatics.

• The variation course of the control parameters of type 37 engines during the activation of afterburning in case of an interruption in the electrical circuit supplying power to the electromagnetic valve EM-1 (the valve for supply of afterburner fuel) is illustrated by fig. 3. As a result of failure, the pressure of fuel  $p_d$  in the afterburner collector drops to zero ( $p_d = 0$ ). The ignition device operates in a continuous mode, as indicated by the absence of an electrical signal of switch-off of the microswitch







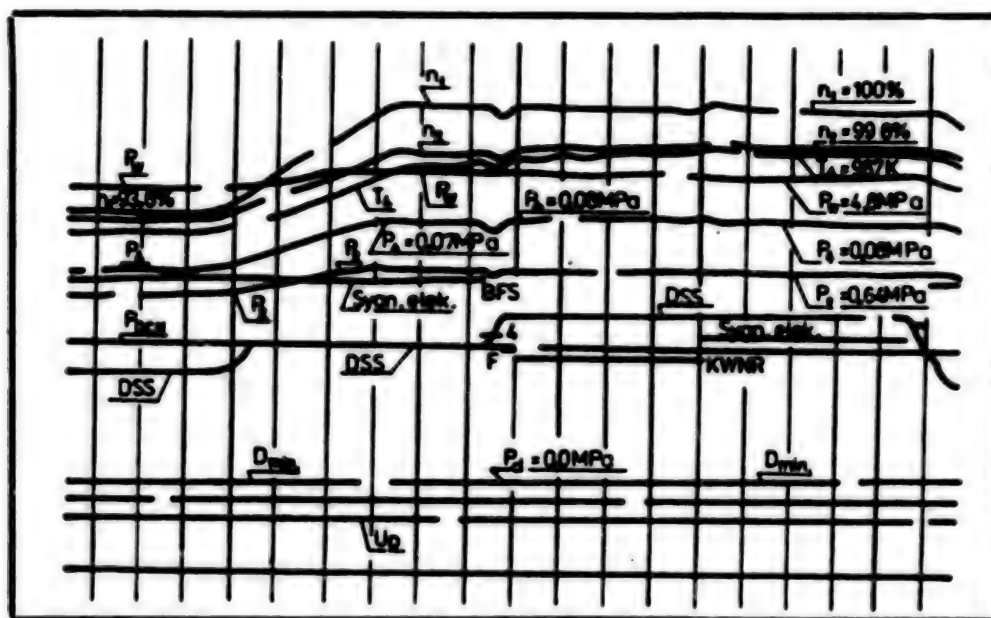


Figure 4. Course of the process of afterburner activation in case of a break in the electric circuit feeding power to the winding F of the valve GA-164 controlling the cross-section diameter of the engine nozzle (nozzle in position  $D_{\min}$ ). Notations are as in fig. 2.

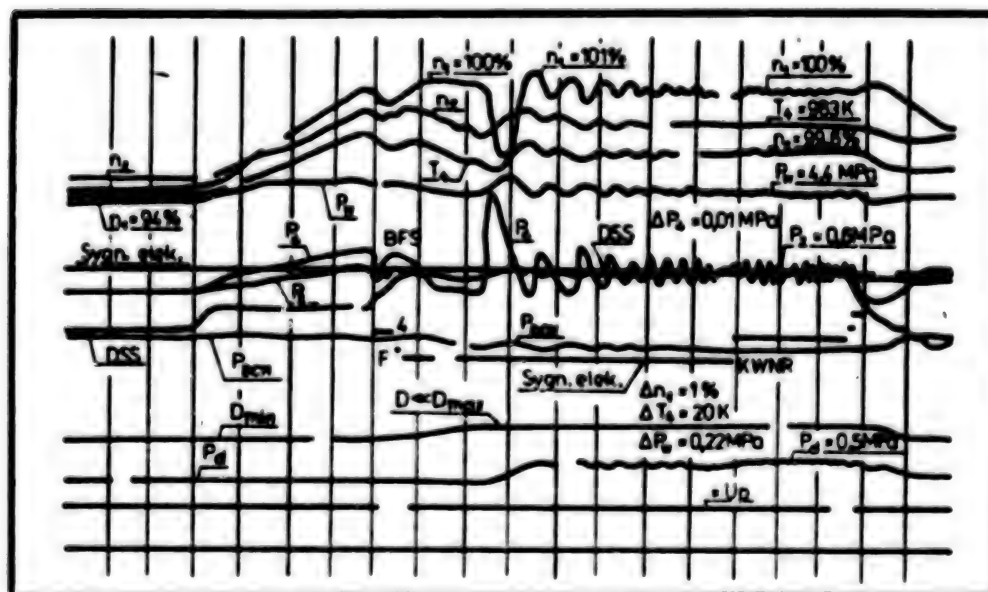


Figure 5. Course of the process of afterburner activation in case of a failure of the valve G-164 controlling the cross-section diameter of the engine nozzle ( $D \ll D_{\max}$ ). Notations are as in fig. 2.

The damage of afterburner activation control system described above is typical for engines of class 37. The material presented in the paper may be of help to engineering and flight personnel in locating and rapidly correcting failures associated with the afterburning activation system.

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9922

CSO: 2600/487

## LEAKY AIRCRAFT OIL PUMP SEALS CAUSE COSTLY REPAIRS

Warsaw PRZEGLAD WOJSK LOTNICZYCH I WOJSK OBRONY POWIETRZNEJ KRAJU in  
Polish No 5, May 86 pp 41-43

[Article by Lieutenant Colonel Tadeusz Warecki, MSc (Eng): "Leaks in the Drives of Hydraulic Pumps NP34-1T, NP34-2T and NP34M-1T"; the first paragraph is a summary]

[Text] Most supersonic jets of our air force use hydraulic pumps NP34-1T, NP34-2T or NP34M-1T. The pumps are powered by the engine through a gear box. During the course of operation it happens that AMG-10 oil from hydraulic pumps leaks through into MK-8p oil in the engine lubrication system, despite the fact that the drive systems of the pump have special seals. The leakage of AMG-10 oil into the engine lubrication system causes, among other things, a lowering of ignition temperature and thermal stability of MK-8p oil, thus worsening the engine lubrication. Accordingly, when it is established that AMG-10 oil has penetrated into the MK-8p oil (and that the engine is operating on this mix), the engine has to be sent in for an overhaul. Since this involves high costs, it is important to discuss the factors affecting the hermetization of the pump drives and the operation principles that prevent leakage of AMG-10 oil into MK-8p oil.

The pumps NP34-1T and NP34-2T use plane front seals, while the pump NP34M-1T uses two-sided radial seals. In the front seal, the drive shaft rotates together with a spring, a steel sleeve, a rubber ring and a brass ring, so that there is no friction between the rubber ring and the shaft. The tightness of this assembly depends on the smoothness of the front surface of the brass ring and the surfaces of the (concave) cover and (flat) steel washer that are in contact with it, as well as the condition of the rubber ring. The smoothness of processing of the front surfaces should be grade 10 or 11; it should be borne in mind that a smoothness above grade 11 would reduce the thickness of the oil film and thus cause an increase of friction and temperature. The sealing quality also depends on the direction of the marks left after surface machining, because during rotation of the brass ring and its gliding relative to the contact surfaces the resulting contact stresses may increase or decrease the thickness of the oil film. In order to prevent the oil on the front surfaces from penetrating into the internal surface of the pump, the brass ring and the cover have grooves, openings and drainage channels by which the oil is led to the outside of the plane. The rubber ring prevents the leakage of oil around the shaft

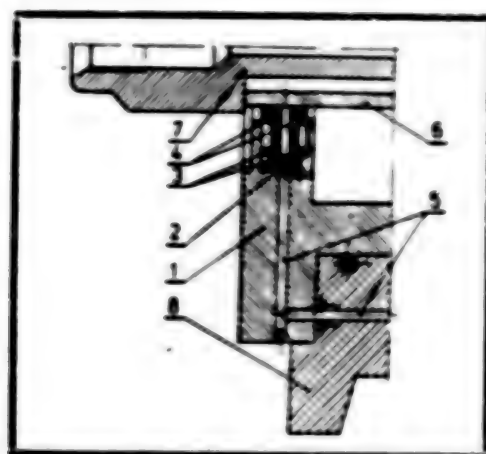


Figure 1. Sealing assembly of the drive shaft of NP34M-1T: 1 - cover; 2 - sleeve; 3 - shaped rubber rings; 4 - clamp springs; 5 - drainage channel; 6 - drive shaft; 7 - coupling; 8 - pump body.

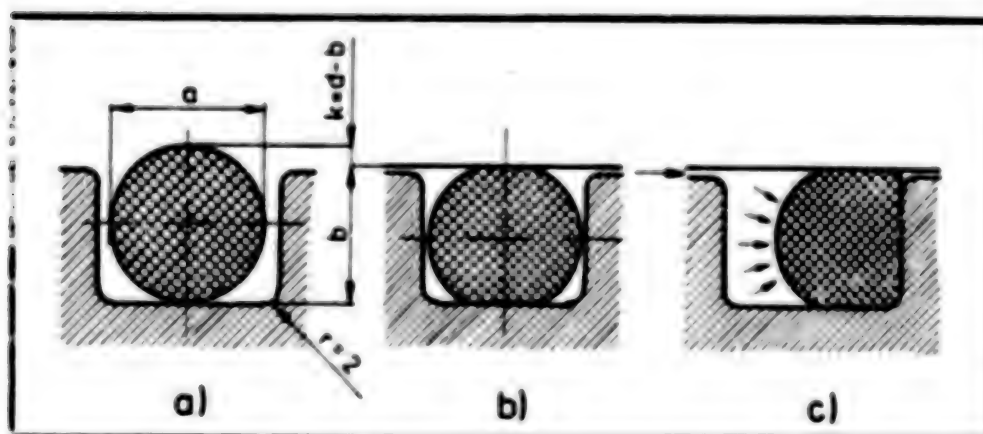


Figure 2. Operation of a rubber ring sealing the connection of the shaft with the sleeve: a - rubber ring in sleeve groove; b - clamping of the ring between the shaft and the sleeve in absence of pressure; c - clamping of the ring after pressure is fed.

by so-called initial pressure. In order to secure the initial pressure of the rubber ring, its cross-sectional diameter  $d$  and the groove depth (fig. 2a) are selected so that the ring placed in the groove between the sealed surfaces of the shaft and the sleeve has the pressure  $k = d - b$  (fig. 2b). The initial pressure of seal rings in the pumps NP34-1T and NP34-2T where friction plays no part (the shaft, the ring and the sleeve rotate together) must be equal to 15-20 percent. This provides the sealing of the unit in the absence of pressure; this value determines the efficiency

of sealing especially at low temperatures. When the pump operates at negative temperature, the initial ring pressure is modified because of contraction of the rubber, and sometimes disappears completely. The magnitude of the shrinkage depends on the coefficient of linear thermal expansion, which for rubber is almost 10 times that for steel. The clamping of the rubber ring increases with the appearance of the fluid pressure because of the deformation of the ring under the effect of this pressure (fig. 2c). It can therefore happen that the pump will be leakproof during engine operation, but when the engine is idle and there is no pressure in hydraulic collectors, and therefore in the pump chamber, it loses tightness and AMG-10 oil may slowly leak into the system of engine lubrication.

So far in the experience of operation of NP34-1T and NP34-2T pumps the leakage of AMG-10 oil into the engine lubrication system has mostly occurred as a result of the following:

- scratching of the seal surfaces by mechanical impurities;
- clogging of openings and drain channels of the pump by impurities;
- isolation of sediments and resin compounds due to contamination of AMG-10 oil by other fluids;
- damage of the rubber ring; and
- insufficient initial clamping force of the rubber ring.

Studies have shown that overly low clamping force of the ring, which results in loss of sealing primarily at low temperatures, can be a result of:

- loss of elasticity and flattening of the rubber ring because of the natural process of rubber aging after excessively long operation of pumps (longer than their rated service life); and
- the possible introduction, when the pump is assembled, of rubber rings of a too-small cross-sectional diameter.

When the pumps are repaired in cases when imported rubber rings are unavailable, domestic rubber rings with a diameter of  $d = 1.8 \pm 0.1$  mm are sometimes used. As a result of this, pumps with rubber rings of initial clamping force (at the time when the pump is repaired) of just about 9 percent were sometimes put into operation. Imported rings have a diameter of 1.90-1.93 mm, securing an initial clamping force of 18.4-20 percent. This theory was confirmed by the fact that at negative temperatures there have been cases of pumps leaking after overhaul at the very beginning of operation. In order to avoid this in the future, it was suggested to change the rings and use those with a diameter of  $1.9 \pm 0.1$  mm.

The seal of drive shaft in pumps NP34M-1T shown in fig. 1 is a two-sided radial seal, which is easy to make and has a relatively long service life. Pumps of this type are a modification of the NP34-1T pump and currently only they are produced. The efficacy and service life of seals in these pumps depends on the smoothness of the drive shaft and the unclogged

condition of the drainage channel and conduit. In practice, damage of a radial seal in the NP34M-1T pumps occurred mostly as secondary damage caused by particles of a damaged pump piston unit or other mechanical impurities getting between the shaft and the seal ring.

In considering the service life of seals, the following recommendations can be stated for the users:

- it is important to maintain the drainage channels in a clean and unclogged state;

- it is inadmissible to blow-clean the drainage channels without separating them from the pump terminal;

- in case of an increased outflow of AMG-10 oil from the drainage conduit or a lowering of oil level in the collector in absence of internal leakage, it is necessary to:

- dismantle the hydraulic pumps;

- check the seals of pumps at positive and negative temperatures, bringing into the chamber of the pump piston unit (through circulation terminal) the oil with pressures from 0 to the pressure corresponding to positive pressure in the hydraulic collector;

- check the color and quantity of MK-8p oil;

- if AMG-10 oil flows out in excessive amounts only to the drainage end of the pump but the color of MK-8p oil is not changed and its level in the engine is not raised, only the pumps must be replaced; and

- if AMG-10 oil leaks around the drive shaft, the color of MK-8p oil is changed and the level of this oil in the engine has risen, it is necessary--in case one is certain that the engine has not operated on this mix--to carefully rinse the lubrication system of the engine and replace the pumps; however, if the engine has operated on the oil mix the engine has to be replaced.

- in the pumps NP34-1T and NP34-2T toward the end of their service life, especially in winter, when the planes are idle, and at zero pressure of oil in the collector, AMG-10 oil may leak around the drive shaft into MK-8p oil; in order to discover this fact early and avoid the replacement of the engine, one should watch carefully for any changes in the level of AMG-10 oil and MK-8p oil and a change of color of the MK-8p oil.

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CSO: 2600/487



## AIR FORCE HOSTS 28th FLIGHT SAFETY CONFERENCE

Warsaw PRZEGLAD WOJSK LOTNICZYCH I WOJSK OBRONY POWIETRZNEJ KRAJU in  
Polish No 5, May 86 pp 77-78

[Article under the rubric "Information": "An Innovative Flight Safety Conference"]

[Text] On 30 Jan 1986 the 28th Conference on Flight Safety of the Air Force of the Polish People's Republic took place. It was preceded by conferences in the tactical units of the air force at which detailed analyses were made of the flight accidents that had occurred and specific suggestions were formulated for preventive actions in this painful area.

The program of flight safety conference this year was somewhat different from the preceding years. The conference was much shorter but probably will produce better effects. A valuable introduction to the discussion was the highly interesting and analytical paper by flight safety chief of the air force, Colonel-Pilot Dr Juliusz Werenicz. Among other things, it contained many suggestions concerning the methods of analysis of flight accidents and the evaluation of the objective indicator of accident rate in the individual categories of the air force. A clear picture was presented of the accident rates for 1985 and for the preceding five-year period.

From this report it follows that, still, almost 75 percent of accidents were caused by the so-called human factor, i.e., that man was at fault more often than technology. This concerned mainly the flight personnel and partly maintenance personnel. In one unit, for example, the disconcerting fact was established of repeatability and even increase of accidents over several years (under identical circumstances with the same causes and effects).

The need was demonstrated for making instructions more stringent, so that it be always unequivocally known who is the leader of a crew; this would eliminate the instances of simultaneous operation of controls by the instructor and the (controlled) trainee at some stages of the flight.

Much attention was given to training methods. It was confirmed that one should avoid (wherever possible) verbal instructions, always preferring demonstration and drills. Instances where training equipment is utilized

just to 75 percent of capacity should not be tolerated. For such inefficient training practices, those responsible should be officially disciplined. In discussing the efficient training of personnel, it was mentioned that the proverbial piece of concrete that gets into the aircraft engine because the runway was not swept costs us more than 40 million zlotys, not to mention the danger to the lives of the crew.

The discussions at the conference this year were brief, businesslike and constructive. Fourteen officers took part in them. Each presented, in a few minutes (up to 12 minutes), suggestions and concrete proposals or shared the experiences of his own unit. From these speeches it follows, in particular, that:

--when training pilots for modern planes, good effects are obtained when the pilots are prepared individually by the engineers in a particular specialty; there is only fear that, with time, a less demanding attitude may set in;

--there is a need for regular instruction and training in the distribution of pilot's attention during a flight; it was emphasized that this concerns not only the use of state-of-the-art technology;

--during preparation for a flight, much attention should be given to cooperation of the crew, especially when it consists of pilots who are members of the leading personnel of the unit; and

--preventive measures in the area of flight safety are still insufficient; some of the commanders underestimate its importance.

Major Roman Iwaszkiewicz, MSc (Eng), described to conference participants his method of work on eliminating flight accidents caused by equipment failures. The detailed documentation of equipment troubles, their directed analysis and subsequent preventive actions introduced by him have reduced the number of accidents in the air force regiment by about 40 percent during the year.

Colonel Professor Krzysztof Kwarecki, MD, presented extremely interesting results of studies of pilot reaction during the individual stages of the flight. Of special interest to the conference participants were the findings on the emotions felt by the pilot during the take-off and landing of the plane operated by him.

Professor Kwarecki voiced a critical opinion concerning the biological rhythms and their influence on the efficiency of human operation. He stated that there is no scientific basis for the views that are currently becoming popular in this area. He indicated that the spread of pseudo-scientific information about biological rhythms in certain cases has a negative effect on organization of flight activities.

The 28th Conference on Flight Safety was innovative both in form and in content. For the first time, the participants had the courage to speak, even though in a very general form, about the predictions of future accident rates. They pointed out those areas of (inefficient) activity which

may be the root cause of flight accidents. Unfortunately, they did not apply the theory of probability and did not present specific numbers of expected flight accidents. Possibly, a threat of such numbers would have a more effective influence in improving the flight safety prevention measures.

The conference was held under the slogan "Flight Safety Is an Indispensable Condition of Combat-Readiness of Poland's Air Force." During the conference several other expressive slogans were stated and proclaimed, such as "Everything Should Be Done for Combat-Readiness of the Air Force." Flight safety cannot be the main goal of our activities, but an indicator which determines the criterion of efficiency and rational organization of the process creating combat-readiness. Another slogan addressed to unit commanders read, "If You Are Certain That in Your Unit Everything Is in Order in the Area of Flight Safety, That Means That You Have No Idea as to What Is Happening in This Area."

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CSO: 2600/487

## ROLE OF INTELLIGENTSIA IN ADVANCED SOCIALISM DETAILED

Bratislava PRAVDA in Slovak 17 Jun 86 p 4

[Theoretical article by Dr Eva Gnothova: "Intelligentsia in Contemporary Social Practice"]

[Text] The fundamental developmental tendency involved in the social changes within the socialist society during the period during which a developed socialist society is being created is the rapprochement between the classes and social groupings, the deepening of their political and moral unity. The social class structure of our society during the decades during which socialism was being created underwent deep changes. The working class, as the leading force of the socialist political system, is the main actor in the revolutionary transformation of society. In the creation of socialism it is actively assisted by the class of cooperative farmers and by the social group of the intelligentsia. The mutual relationship between them, expressed by the alliance of the working class with the class of cooperative farmers and the alliance between the working class and the social group of the intelligentsia form the foundation for the process of their mutual drawing together.

The report by the Central Committee of the CPCZ regarding fulfillment of the resolutions of the 16th Congress of the CPCZ reflects these developmental tendencies in the following manner: "Together with fulfilling demanding tasks in the development of the national economy, the party devoted great attention to deepening socialist societal relationships, to perfecting the political system and to developing socialist democracy. During the years for which we are providing accountability, the power of the working people was further strengthened, as was the leading role of the working class. The alliance between workers, cooperative farmers, and the intelligentsia--between all working people, was strengthened." This high degree of development with respect to the alliance between the working class and the other strata of the population during the period since the 16th Congress through the 17th Congress of the CPCZ confirms the successful course of their further rapprochement, confirms the fact that social differences between them on the way toward the installation of a classless and socially homogeneous communist society, are being wiped out.

The working class, as the leading force in our society, is undergoing its own internal progressive developments during the years of formation of socialism. The report by the Central Committee of the CPCZ regarding fulfillment of the

resolutions of the 16th congress of the party states that: "...there has been a growth in the conscientiousness, the level of education, culture, and specialization within the working class. Its participation in managing production, in the sociopolitical life of the country, has intensified." This qualitative growth with respect to the working class, its qualitative changes, are a guarantee of the further successful advance of our entire society.

### Specific Position in Society

In fulfilling its social tasks, the working class is supported by its allies. The essence of the alliance between the working class and the intelligentsia stems from the professional activities of the intelligentsia, which are the creation, dissemination, and application of science in social practice. The professional activity of the intelligentsia is contingent upon the development of production forces of society, whose attained degree of development, in the final analysis, determines the form of production relationships, and the set of production relationships--the economy. The social function of the intelligentsia, which is based on its position in the professional, technological side of the social division of labor, but which, in its final impact, reaches into the areas of production relationships, in other words into the socioeconomic side of the division of labor, leads to the fact that, although the intelligentsia appears as a professional group, the sphere of its interests is reflected in the economy. This is the reason why the ruling class manifests such a great interest in a class society in the professional activities of the intelligentsia. That is why the professional activities of the intelligentsia are irreplaceable even in a socialist society. From this aspect, the intelligentsia very effectively assists in the universal progress in our country. The report by the Central Committee of the CPCZ regarding fulfillment of the resolutions of the 16th congress of the party in conjunction with the analysis of alliance relationships enjoyed by the working class also evaluates the social contribution of the intelligentsia. It states that: "...in close conjunction with the working class and with the cooperative farmers, the intelligentsia fulfilled its mission and, through its creative work, significantly contributed toward the economic, social, and spiritual progress of society."

In the period of creation of a developed socialist society, questions of socialist production primarily come to the fore, including questions pertaining to the increasing of efficiency of social production and broader applications of intensification factors in its development. The intensive development of the socialist economy is realized under such social conditions in which the advantages of socialism are joined with the successes of scientific-technical development. Scientific-technical development, contingent upon the speedy development of science as the immediate production force, represents a revolutionary change in the development of production forces, influences the development of production relationships, and, thus, increases the pace of social processes.

An important role in the life of a socialist society is fulfilled by the humanistic intelligentsia in the sphere of culture, art, science, education, and in other areas of the social superstructure.



The results of the activities of the humanistic intelligentsia are of great significance for society--their absence would lead to the impoverishment of the spiritual world of man, to the destruction of the personality, to the decline in man's personal culture, and, in its final effect, even to stagnation in social progress.

#### Dynamic Process

The constant growth of the significance of science in the life of society is a universal process at present, but, in view of the class delineation of the world, it is currently also a process which is under way under qualitatively different socioeconomic conditions. It is accompanied by varying socioeconomic consequences, conditional upon the different quality of production relationships under capitalism and under socialism. In connection with this developmental tendency, the social significance of science is growing, as is the social function of its carriers--members of the intelligentsia.

The alliance between the working class and the intelligentsia is a significant social force even under socialism and precisely for this reason it is frequently in the center of attention of rightist revisionists and bourgeois ideologists, who are attempting to undermine this alliance and to manipulate the intelligentsia in socialist countries so that it would become an instrument against the people, an instrument for the attempts of the West to effect a counterrevolution in socialist society. In recent years, the attack of bourgeois ideologists and rightist revisionists, many of whom have adopted the positions of renegades, have been oriented primarily at denying the social mission of the working class, its historic mission and leading role. For the most part, they argue that in the current phase of scientific-technical development, the intelligentsia--in truth--becomes a basic production force of society and, therefore, assumes the leading role of the revolutionary movement. They stray from the fact that every society is always led by a governing class. But the intelligentsia is not a class but, on the basis of its standing in the socioeconomic side of the social division of labor, represents a conglomerate of members from various classes and social groupings and can share in this leadership only as an intermediary for the ruling class, but in no event as a ruling principle. The leading of society does not only have its professional aspects, which are reflected in the inevitability of certain qualifications, but in a class society primarily has its socioclass essence. Thus, just as the social function of intelligentsia is irreplaceable in the organizational-technical side of the social system, so the leading role of the working class grows out of its class-economic position in the socioeconomic side of the social system and, thus, also in the area of the political leadership of society, where the Communist Party is at its head.

#### Higher Qualitative Demands

The starting point of the process of rapprochement between the working class and intelligentsia, however, cannot be sought at the professional level. This is because the social difference between members of the working class and the social group of the intelligentsia stems from their different standing in the sociopolitical side of the remnants of the old division of labor which

expresses the class-determined relationships between people. The result is the fact that the intelligentsia shares very broadly in the professional participation in managing society. A component of the social function of the intelligentsia is, in other words, even the sociopolitical aspect of mental work. Consequently, it is unavoidable for qualified cadres of leading workers to be entrusted with directing organizational work; we understand qualification to be the dialectic unity of specialized and political knowledge. This requirement, to the extent that the level of our managing workers is concerned, must be fully respected within the meaning of the political report of the Central Committee of the CPCZ of the 17th Congress of the CPCZ which stresses the need: "...to systematically increase both the specialized as well as ideological and political preparedness of managing workers." The report further emphasizes the importance of consistently augmenting the education and increasing the political and specialized qualifications of managing cadres, of becoming familiar with Marxist-Leninist theory, and with party methods of work, because this is the only "...barrier to the dangers of narrow specialization, of mindless practicism, a guarantee for broad political views and a high level of culture."

The different positions of the working class and the intelligentsia in the sociopolitical side of the remnants of the old division of labor is a factor which determines that the focal point of the process of rapprochement between the working class and the intelligentsia is in the sphere of the economy, in mutual connection with policy. Despite the fact that the problem of professional participation in managing society is manifested in the professional level, it is not a professional relationship, but a political one. What functions here is the sociopolitical side of the social division of labor, which expresses relationships of superiority and subordination which cannot be disrupted until the transition toward an all-people's communist self-administration has reached its peak. This is why the process of rapprochement between the working class and the intelligentsia in the area of managing society is very complicated.

On the one hand, it is conditional upon the fact that the social system under socialism must be inescapably based on the application of the leading role of the working class which stems from the fact that in its standing it purges itself of the remnants of the old division of labor to a much greater extent than any other social stratum. On the other hand, it is precisely the effects of the persistence of these remnants of the old division of labor that the intelligentsia continues to have a significant place in the process of social management. This serious social question will be solved in the historical perspective by the removal of its general foundation--the remnants of the old division of labor completely and, within this framework, even of its effects. The political report of the Central Committee of the CPCZ of the 17th Congress of the CPCZ confirms that our society has already taken strides along this road because "...a permanent line of our policy is the development and perfection of socialist democracy, the expansion of the participation of the working people in managing state and public affairs."

If membership in the socioprofessional group of intelligentsia is--as already pointed out in their work by K. Marx and F. Engels--primarily determined by the position in the socialist division of labor and secondarily by education,

then questions of educating and preparing the socialist intelligentsia in the current era of our development takes on an all-societal significance.

As a result of its socioclass interests, a socialist society must devote consistent care to the reproduction of an intelligentsia which will assure that its ranks contain an adequate share of those members of society who originate from working class families, as well as from families of cooperative farmers. Through this method, the process of reproduction pertaining to advanced school and middle school cadres becomes one of the forms of effecting rapprochement between the intelligentsia and the working class and the other strata of socialist society. It prevents the intelligentsia in our society from replicating itself as an internal closed layer. The development of education in the era of creating a developed socialist society thus becomes one of the paths leading to the breaking up of differences between the working class and the intelligentsia.

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CSO: 2400/333

## CPSU CC SECRETARY YAKOVLEV MAKES SHORT STATEMENT TO PRESS

AU301046 Warsaw TRYBUNA LUDU in Polish 27 Jun 86 pp 1, 7

[PAP Moscow: "Cooperation for the Benefit of Both Our Countries -- Statement by CPSU Central Committee Secretary A. Yakovlev"]

[Text] CPSU Central Committee Secretary Aleksandr Yakovlev has made a short statement to PAP and Polish TV correspondents prior to the 10th PZPR Congress. As far as we know, the comrade secretary will attend the congress.

[Question] What would you wish of the 10th congress, its delegates, and the entire PZPR?

[Yakovlev] Most of all, great success. I can tell how important this is on the basis of our 27th CPSU Congress, at which a great turnabout was made. We call it a breakthrough congress because it contained events which can be regarded as breakthroughs in our country's history, and especially in the general development of socialist society. This does not mean we are rejecting everything we had before. We are in favor of continuity in policy and leadership. However, at the same time we believe that the possibilities created by a socialist system are still not being used sufficiently and effectively. Right now the party is doing everything in order to use these possibilities better, more wisely, and with greater verve in economic and political development. We call this a strategy of accelerated socioeconomic development.

A considerable turnabout has recently been achieved both in relations between the socialist countries and the system of cooperation between them. I believe that our economic integration, scientific-technological cooperation, and political unity will develop to the advantage of all our countries, including for the benefit of Polish-Soviet relations. I believe there are great possibilities here.

That is what I wish to tell you in brief, wishing all our Polish brethren success at the 10th PZPR Congress, and expressing the conviction that these achievements will become a fact.

/9871

CSO: 2600/564

## USSR SCIENCE, TECHNOLOGY OFFICIAL DISCUSSES COOPERATION

AU261412 Warsaw TRYBUNA LUDU in Polish 23 Jun 86 p 5

[Interview of Mikhail Kruglov, deputy chairman of the USSR State Committee for Science and Technology, by an unidentified reporter: "What Has Already Been Achieved, What Will Be Done" -- date and place not given]

[Text] TRYBUNA LUDU has asked Mikhail Kruglov, deputy chairman of the USSR State Committee for Science and Technology and chairman of the Soviet Commission for Scientific-Technological Cooperation between the USSR and the PPR, to comment on the current state and prospects of scientific-technological cooperation between the USSR and Poland. ]

[Question] It is a tradition that when planning every new step, achievements so far are assessed. Let us remain faithful to this custom?

[Kruglov] By all means. I and my Polish colleagues have a lot to talk about. After all, 54 USSR ministries and institutions and 20 Polish ones have resolved on each side 270 branch industrial problems and topics concerning scientific-technological cooperation in the period 1981-1985.

For example, the result of joint efforts by specialists from the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises and the PPR Ministry of Mining and Energy is the construction of uniform automatic equipment for the installation of pipes with a diameter of 1,020 mm, 1,220 mm, and 1,420 mm during the construction of petroleum and gas pipelines. Another example: laboratories in the USSR Ministry of Shipbuilding Industry and the PPR Ministry of Metallurgy and Machine Industry have developed materials with a high resistance to corrosion. The application of these will permit a more sparing and rational use of such valuable materials as platinum, cobalt, nickel, chromium, molybdenum, and so on.

One could quote many other examples. I remember the director of the Scientific-Research Institute of Machine Building in Kobylka near Warsaw telling me that cooperation enables them to reduce by one-half the financial outlay and materials necessary for the development of new types of technical equipment and to reduce by a similar scale the time it takes to introduce them into practice.



[Question] But scientific-technological progress has not stood still. We are witnesses to its constant development. What place in this process is occupied by the comprehensive bilateral program signed in September 1985?

[Kruglov] This program calls for a construction of efforts on seven priority paths for the national economy, starting with research and development and ending with production and mutual deliveries meeting the highest world standard.

Some 180 Soviet organizations and 93 Polish enterprises will be involved in the implementation of the program. Scientific research, experiments, and planning will cover 350 problems and topics. As you can see, the extent of the work is enormous and we will not have long to wait for its results. During the present (1986-90) 5-year plan alone it is foreseen that 26 new types of machines and 38 types of equipment will be created, as well as 48 types of components, 28 materials and biological products, and 49 modern technological processes.

[Question] As we know, the implementation of the Soviet-Polish program involves new forms of cooperation and the organization of joint scientific-technological centers.

[Kruglov] A draft agreement and scientific-technological program, draft statute, draft rules concerning personnel, and other documents necessary for the organization of these centers will be worked out by the middle of this year.

There are plans to set up design offices to develop prototypes of a digital color television set and a jointly-built delivery vehicle which will be manufactured by the automobile factories in Lublin and Ulyanovsk in accordance with our plans. Also called for is the production of modern self-propelled hydraulic cranes with the ability to lift 250 metric tons.

As far as computer technology is concerned, we foresee joint projects and experiments involving small-, medium-, and high-capacity computers, including personal computers, followed by the production and mutual delivery of these.

Concerning the reestablishment of direct contacts between scientific research institutes, it has been recognized as expedient to establish such contacts between the science academies of the Latvian and Estonian SSR's on the one hand, and the Polish Academy of Sciences on the other. Similar contacts already exist between 90 scientific institutes in the USSR and Poland. Fruitful cooperation between the Polish Academy of Sciences and the science academies of Belorussia, the Ukraine, and Lithuania is already developing.

New forms of cooperation call for better basic research, which in turn will be a necessary prerequisite in order to improve the quality of the final product.

[Question] The development of the production of high-quality general utility goods is one of the priorities of the long-term program. How will this development appear in practice?

[Kruglov] Just as is the case with the entire program, this part of the program will be implemented on the basis of specific agreements governing all stages--science, technology, production, and exploitation. Some of these agreements have already been signed and others have to be prepared and approved as quickly as possible.

In the next few years and in the more distant future we will continue cooperation concerning the joint designing of clothes and improve the technology behind the manufacture of high-quality linen fabrics for personal and industrial purposes.

Many interesting joint solutions concerning machinery and technical equipment in daily use are also foreseen. I have in mind refrigerators and freezers that are less energy-and-materials intensive, electronically-controlled automatic washing machines, and so on.

[Question] Apart from new paths of scientific-technological progress, will there also probably be cooperation in other spheres traditional to both sides?

[Kruglov] I would like to give first mention to the coal industry or, to be more precise, cooperation in constructing modern mining excavators for use at various depths and seam densities. It is interesting that at each stage of work, each side follows its own path of work that differs from the one followed by the other side, which permits a broader scope of scientific research and the development of economically more favorable variants of the final product.

As far as energy is concerned, it is planned to develop and introduce in the next few years the most modern technical equipment possible, equipment that guarantees a more efficient use of low-calorie fuel during energy generation. Is it necessary to prove how important this development is for our countries because it permits a greater use of low-quality brown coal?

From this point of view, the joint construction of boilers powered by burners that use low-calorie fuel will be very important. I wish to stress that the joint work between the Central Institute of Boilers and Turbines of the USSR Ministry of Power Machine Building and the Energy Institute of the PPR Ministry of Mining and Energy on building a new generation of turbines for the power industry about 6-8 percent more efficient than the ones at present is proceeding very favorably.

As we can see, our achievements are not insignificant. But still more has to be done in order to put our plans into practice. There is every basis for saying that these plans will be completely fulfilled through the joint effort of both our countries.

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CSO: 2600/564

## POPE ADDRESSES JOURNALISTS ON FREEDOM

AU160656 Krakow TYDOGNIK POWSZECHNY in Polish 6 Jul 86 pp 1, 3

[Text of speech made by Pope John Paul II to a delegation of the Polish monthly ZNAK in the Vatican on 19 June--in Polish]

[Excerpts] Eminences, Excellences, Ladies and Gentlemen, Dear Friends, I am pleased to meet here with you on the occasion of the jubilee of the ZNAK monthly [appearing in Poland--FBIS], which has served Christian and Polish culture for the past 40 years. I am especially pleased that we are celebrating this jubilee here together with the friends of ZNAK from various countries.

In your monthly you tackle the current problems of liberation against the background of the past, especially in connection with the intellectual streams and experience in the Poland of last century. Man's struggle for liberation and fulfillment of his human rights is not a new struggle. It is good to know the achievements and errors of the past in order to prepare a better future. The present-day world needs to be liberated from various constraints. Some countries continue to painfully experience the dramas of political and economic coercion, which at times acquires the form of violence or permanent oppression. Nor should we forget the more subtle constraints and interference, which are able to deform and mutilate thoughts and feelings through a tendentious selection of information, through manipulation of language, and through efforts to falsify values. The recent instruction of Christian freedom and liberation speaks of the oppression and tasks of the Christians and of the need to change unjust structures and to remove injustice from the hearts of men.

The development of Christian culture in social life and activity begins with the correct understanding of the essence of freedom--internal and external freedom based on goodness. Liberation is in the final reckoning a victory of the good over the bad in every man and in social life. Progress in social life should produce a better protection for human rights, including the right to freedom, and create better conditions for man's development. However, social liberation is genuine and effective only when goodness is victorious in the heart of every individual. The greater social evils are, the better must be those who fight them so that they can resist the poison emanating from these evils.

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CSO: 2600/564

## KALKUS ON POLITICAL UPHEAVALS, SOLIDARITY

AU141307 Warsaw POLITYKA in Polish 28 Jun 86 p 7

[Interview given by Stanislaw Kalkus, Cegielski plant worker and PZPR Politburo member, to Andrzej Kepinski and Zbigniew Kilar: "The Year of 1956 Has Taught Us A Great Deal" -- date and place not given]

[Excerpts] [Question] How would you compare the 1956 events in the Cegielski plant with the upheavals in the seventies and in 1980?

[Kalkus] I am neither a sociologist nor a politician, but I am able to say that the conflicts between the workers class and the authorities have one common denominator. To my way of mathematical thinking the numerator was always represented by the workers class--the authorities and the denominator by the "third" force--by those who waited for an opportunity to make trouble and then to disappear so that the workers class had to support all the burdens of this troublemaking. In 1956, 1970, and 1976 this denominator also included guttersnipes who were responsible for loss of life and large economic losses. In 1980, the maturity of the workers class was developed enough to help avoid the past errors, but the denominator included new partners from KOR who were not workers and who through their politicking brought about political and economic anarchy and, especially, poverty, which was most harmful to the world of labor. This is the most important lesson for everyone to heed in our country. Let us hope that it was the last lesson.

[Question] How can you explain that in 1956 the Poznan workers were the first in postwar Poland to say to the people's government: "socialism yes, distortions no"?

[Kalkus] The year 1956 taught us a great deal. The authorities and the workers class realized that it was necessary to change the methods of government and democratize public life. They stopped talking about the class struggle of the fifties and began to take more interest in the conditions of the workers class. In 1956, Cegielski workers were convinced that it was necessary to fight, but calm reigned in the Cegielski plant in 1970, 1976, and 1980.

[Question] Why?

[Kalkus] Because we knew that it is easy to unleash a civil war, but very difficult to stop it.

[Question] You were never a member of Solidarity. Would you tell us about your talks with your colleagues in your plant who were Solidarity members at one time? Did you agree with them or did you quarrel?

[Kalkus] I agreed with them about the facts. The August protest of the workers class was a just protest. At that time conditions could have been created to implement the tasks that we party members had proposed during the pre-congress campaign leading to the eighth congress and during the eighth congress itself. However, I could not come to terms with the fact that Solidarity leaders "stole" our proposals and presented them as their own.

I think that it was stupid of Solidarity to look for support from the so-called advisors who descended on Gdansk like vultures. It was they who made the Solidarity trade union into the opposition against the people's government. I did not agree with the way in which the Gdansk agreement was signed. Whereas this signing was an earnest matter in Szczecin, the Gdansk signing was a ceremony featuring a huge ball-pen, Holy Mary, and the cross. Was this to convince us that Solidarity would be an independent trade union?

I did not join Solidarity because from the very beginning I was not convinced that Solidarity leaders would stick to their program based on the slogan "Socialism yes, distortions no". There were many other people who also had such doubts. I am convinced that if in November 1980 lists of Solidarity members were drawn up they would never amount to 9 or 10 million members as Solidarity leaders continued to assure us. Carried away by emotions, at first people identified themselves with the August protest, but they became selective in their identification when they began to look more closely at what Solidarity leaders were doing.

[Question] What about those who were among the top Solidarity members in the Cegielski plant?

[Kalkus] They continue to do their jobs as everyone else. One of them who put to a vote the proposal that the party organization should be thrown out of the plant went to the United States.

[Question] How do you argue with those who say that martial law and the suspension and dissolution of trade unions, including Solidarity, are proof that we have lost as a society?

[Kalkus] Martial law was necessary because it was the means to defend that which the workers party had fought for and that which had been recorded in social agreements.

[Question] Is this a convincing argument?

[Kalkus] Actually it is, if you make real comparisons with daily life.



[Question] The number of those who believe in the thesis that "society lost as soon as Solidarity was dissolved" is decreasing, although they are still in action. On the fifth anniversary of the Gdansk agreements I was [singular text as published--FBIS] in the tricity and had a look at some churches.

[Kalkus] This is interesting. Did you by any chance attend a mass? I am curious about your impressions because at that time I also was in Gdansk. I would like to compare your observations with mine. I attended the Holy Mass in the Dominican church, at which Walesa was present. The mass was a classic political rally and was governed by the aforementioned thesis. After the song, "God, You Who Protect Poland" had been sung, the priest in charge traced Solidarity's traditions to the Bar Confederation [18th century--FBIS] and threatened the "regime", saying that "if we were able to cope with 13 December 1981, we will be able to cope with 13 October 1985," on which day our elections were held. After this it was laymen who spoke. They made their statements in the same tenor and were applauded by the congregation. A rally? The function was supplemented by performances of actors and by the presence of a large group of foreign journalists, who kept on photographing Lech Walesa.

[Question] Today the worker by the name of Kalkus is a famous person. Is he able to cope with his commitments? Does the worker who is called Kalkus and who possesses only a vocational training feel an inferiority complex vis-a-vis the other Politburo members. Is he able to quarrel with them in defending the working people's interests.

[Kalkus] There is no need to quarrel in a cultured company. To defend workers interests it is enough to speak about these interests in the language of the facts taken from life. You must have noticed that the language I use is not very smooth. During Politburo sessions I never try to indulge in fancy talk because I am too old to learn to speak in a sophisticated way. No doubt everyone realizes that I am unable to expatiate on complicated problems. My duty is to speak the language of life and to state my views about various decisions in a way that would be used by my fellow workers in the plant.

[Question] Are you a Catholic?

[Kalkus] I was born to a Catholic family. I was christened and received the holy communion. That I have no spiritual links with the Catholic religion is not a result of my party functions. These links ended much earlier.

[Question] Do you intend to run for a place among the party authorities at the 10th congress?

[Kalkus] This does not depend on me, but, frankly, I would be very sorry if I attended the 10th congress merely as an invited guest.

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CSO: 2600/564

## STEFAN OPARA ON MARXISM'S PLACE IN POLAND

AU160706 Warsaw KULTURA in Polish 25 Jun 86 pp 1, 4

[Interview given by Prof Stefan Opara, head of the Institute of Philosophy and Sociology of the PZPR Academy of Social Science, to Michal Maliszewski: "Where Are We?" -- date and place not given]

[Excerpts] [Maliszewski] You may not agree, but I think that the Marxists in Poland have found themselves in a typical diaspora. Some party members are believers. How does this influence the condition of Marxism in Poland?

[Opara] Certain world outlooks that pretend to be scientific outlooks do not function all at once as outlooks of the masses. Marxism is such an outlook. It is a scientific world outlook of intellectual content, an outlook that in a way requires high cultural standards from those who want to embrace it. Such world outlooks never become popular all at once. It is only gradually that their elements penetrate the awareness of the masses. We should realize that the views of Copernicus or Darwin won general approval only after the passage of time.

The fact that Marxism functions in an environment that is affected by different world outlooks involves certain duties, which means that representatives of a world outlook that enjoys a small following must, among other things, adopt certain attitudes which are not always the attitudes of those who profess popular outlooks, and must show tolerance and an ability to understand and analyze other people's views. This fact also makes it necessary for Marxists to present their own views and arguments. That is why many works written by Polish Marxists are of better scientific and argumentative standards than the works of Marxists in the countries in which they enjoy more favorable conditions.

[Maliszewski] You have surprised me by saying that Polish Marxism shows greater tolerance. I have always thought that a minority feels itself to be held at bay and to be unable to open up.

[Opara] We should view this phenomenon against the background of history because Marxist attitudes are rooted most often in some objective circumstances, and these have differed in the past 40 years. There is no doubt that a Marxist behaved differently during a civil war when he risked

being killed for being a party member. His behavior was again different during the cold war and in the period of nuclear terror, and is different now in the post-CSCE period.

The so-called orthodox Marxists embracing the classic contents of Marxism have as a rule been open to cooperation and have never been a hermetically closed community. I would say that they have promoted dialogue and cooperation in contradiction to the orthodox Catholics, who actually refused to engage in dialogue prior to the Second Vatican Council when they could be excommunicated for cooperating with the Communists. The Marxists follow the slogan "Proletarians of All Countries Unite!", which is a slogan appealing to proletarians and not merely to atheists or Marxists, and, to be sure, proletarians include and will always include people of different outlooks, most of whom are believers.

I would like to stress most strongly that for many years the Catholic Church has been hostile to Marxism, the workers movement, and the communist parties. Moreover, the Church has even been hostile to the socialist orientations inspired by Christianity. Only since the Second Vatican Council have cooperation and dialogue ceased to be officially prohibited.

In this connection we should bear in mind that the political situation can exert a characteristic influence: When the government in Poland is strong, the Church is inclined to engage in dialogue, but when the government continues to weaken, the Church always launches an offensive.

[Maliszewski] Deliberations about Poland's religious attitudes bring to mind the important issue of one's attitude toward culture and certain cultural determining factors. In our country Marxism is unable to escape the duty of defining its attitude toward our national traditions.

[Oparsa] There is much to be done in this regard. If Lenin traces the sources of Marxism to utopian socialism and if the CPSU traces its genealogy to the Decabrists, that is, to the twenties of the 19th century, I cannot understand why we do nothing to revoke the traditions of Polish patriotic utopian socialism. Few people in Poland know that Wojciech Guskowski, a great patriot, was the first Polish utopian socialist, who wrote his important treatise in 1817. We must recall the thoughts and actions of the Polish socialist before the period of Marxism, who set up foundations of socialist ideas in our culture.

The weakening of our socialist traditions is a typical aftermath of the trends at the end of the forties. At that time some ideologues declared that all these traditions were useless. They were cut off and eliminated from public life and party training. The romanticists were declared to have been reactionaries, the realists [pozytywiści] to have been champions of capitalism, and the first Polish Marxists to have been either nationalists or even fascists and idealists. The only people left in the arena of reality were the Marxists from the end of the forties, who tried to set up their own traditions of progressive social thought in Poland. We still feel the results of this error.

While appealing for respect for our progressive traditions, I opt for a rational and critical evaluation of our past. I am doubtful about many of our sacred national symbols. The impact on our awareness of great Polish intellectuals of the past centuries is feeble, and our knowledge of Polish rationalism and effective performance is poor. Other nations glorify in their merchants, engineers, inventors, and industrialists in the same way as they glorify in their great leaders, but our history knows only great leaders. On the other hand, we glorify in futile uprisings and turn them into national models to follow. Of course, we must honor the heroism of insurgents, but we must also separate them from those who frequently demonstrated their irresponsibility when leading uprisings. Our victories are also doubtful achievements. I think we should devote more attention to the opponents of Sobieski's relief of Vienna in 1683. The victory at Vienna strengthened our future annexationists and deprived us of solutions to many domestic problems.

[Maliszewski] What hopes do you attach to the 10th congress, especially in view of the fact that your academy is a place in which special attention is being devoted to our public and political life?

[Opala] I regard it as extremely important that the congress program introduces some order into our thinking about the future and puts straight ideological terms. The last version of the party program includes definitions of socialism and communism. Close inspection of our political science textbooks reveals that they contain definitions of many doctrines except the doctrine of socialism. It was to the advantage of voluntarism in politics that few people knew the difference between socialism and nonsocialism. This typical confusion of terms was also to the advantage of the adversaries of socialism and of the opportunists in the party. The party program is expected to end this state of affairs because it defines socialism and the criteria that help us to differentiate between what is and what is not socialist. I think this will enable us to evaluate our lagging behind others and to identify those areas in the economy, policy, and social awareness that can be regarded as still not socialist or as incompatible with socialism.

In this connection we should stress the importance of that programmatic idea—I hope it will not be lost for the program—that says that Poland has not reached the stage of developed socialism as it was asserted in the seventies, but is still undergoing the transition from capitalism to socialism. This idea prevents us from equating many of the present processes with socialism. These processes contain of necessity many elements that are incompatible with the model of socialism.

I am naturally interested in precisely these theoretical and programmatic achievements of the 10th congress because they concern both long-term strategy and its impact on important short-term targets. It will be an important task for congress delegates and the entire party to ensure that the program adopted by the congress does not become only a compendium of wishful thinking, but is translated into practice.

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## WEEKLY HAILS PZPR IDEOLOGICAL BIMONTHLY

AU161236 Warsaw KULTURA in Polish 25 Jun 86 p 4

[Commentary by Leszek Klinger: "Science For Practice"]

[Excerpt] The bimonthly MYSL MARKSISTOWSKA [MARXIST THOUGHT] published by the PZPR Academy of Social Sciences under the editorship of Prof Stefan Opala has been in circulation for over a year. Eight issues have been published so far, which is not many, but they are enough to make the bimonthly an important publication, one that has been noticed by readers as a cultural event.

MYSL MARKSISTOWSKA is edited in a lively manner because the editorial board has abandoned the too rigid criteria that academic communities impose on the ideas formulated by themselves. The bimonthly publishes scientific articles as well as essays, columns, and letters. In addition, the editorial board--unlike the other humanist periodicals--selects for theoretical treatment the crucial problems of the present changes in the Polish social structure, of socialist construction, and of the current aspects of the ideological struggle. Realizing how great and destructive the role of commonsense thinking based on rigid schemes and stereotypes can be, the editorial board criticizes and analyzes this thinking, especially if it assumes the appearance of arrogant academic prowess that actually hawks quarter- and half-truths.

The editors of the bimonthly propose a different kind of thinking, one based precisely on the rigors of Marxism. How shocking these rigors can be is also attested to by the polemics conducted in other publications by those who have decided that it is unnecessary to mind and to take into account these rigors.

All this is responsible for the fact that the bimonthly continues to stimulate a genuine interest and to have its large number of 5,700 copies sold out.

Moreover, MYSL MARKSISTOWSKA has not abandoned classic economic, philosophical, and sociological problems as viewed from Marxist positions, and this is very important because Marxist research continues to disappear to an increasing extent from STUDIA FILOZOFICZNE or STUDIA SOCJOLOGICZNE, which devote little attention to theoretical problems created by daily public life. It can therefore be said that MYSL MARKSISTOWSKA has filled in a serious gap that has been created in intellectual life in the past few years and has retained integrity and straightforwardness in theoretical and ideological pronouncements.



I think that the success of this bimonthly can also be ascribed to the fact that contributors to it are those writers who have boldly committed themselves to ideological disputes and struggles in the past few years and have tried to use historical materialism as a tool in these struggles. We know their names from the sociopolitical press and scientific periodicals. They include those who have just begun their scientific careers, but have already scored considerable achievements (Miroslaw Karwat and Wlodzimierz Milanowski, for example), as well as older writers (Jarowlaw Lajosz or Stanislaw Rainko), who are well-known and who have enjoyed public respect for years. However, this is not the most important thing. What is important is that they know how to treat Marxism seriously as a tool of studying reality and as a means of formulating important political and ideological diagnoses.

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## PROFESSOR ON DISREGARD FOR POZNAN EVENTS

AU151946 Warsaw POLITYKA in Polish 5 Jul 86 p 2

[From the Press Review]

[Text] ODRODZENIE issue 4 on 28 June 1986 published the following statement by Prof Wladyslaw Markiewicz:

"Wladyslaw Gomulka was so strongly convinced that the severe lesson of the 1956 Poznan events would never be repeated that as early as 1957 he proposed that a funeral shroud of silence be spread over the June tragedy. In practice this amounted to a ban on sociological and psychological research into the sources, course, and results of that Black Thursday, research that began in 1957.

"As years went by, the Poznan events continued to receive less and less attention in the history of postwar Poland. The specialists in contemporary events began to doubt whether they should regard 1956 as a caesura in the history of our country. They said that if such a caesura was to be adopted, then it should be not because of the Poznan 'incident' and of the crucial changes in our political system, of which the October events became a symbol, but because of the obvious fact that 1956 was the beginning of the new 5-year plan. I have written about all this in one of my essays.

"Formalism in thinking and submission to allegedly correct political views grew to such proportions that one of the best textbooks on Polish history published in 1979 trivially mentions the June in Poznan as one of the 'sporadic incidents' that turned into 'local disorders'.

"This situation was radically changed at the beginning of the eighties."

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## PUBLIC OPINION POLLS RESULTS

AU151403 Warsaw POLITYKA in Polish 28 Jun 86 p 3

[Article by Jan Bijak, chief editor of POLITYKA: "The Meeting in the Biggest Square"]

[Excerpts] I have read two papers in connection with the party congress, which will soon hold its debates in Congress Hall at the center of Warsaw. People say that this center is supposed to be the biggest square in Europe.

One paper presents the results of a public opinion poll carried out among the workers of the socialized economy by the Public Opinion Poll Center. The other paper was drawn up by the Press Research Center in Krakow under the title: "The Polish Community Before the 10th Congress" and was signed by Stanislaw Nowicki. The papers, which were drawn up in line with the rules of the art of sociology, tell us about social moods, expectations, and views on the eve of the highest PZPR forum.

The paper drawn up by the Public Opinion Poll Center is based on research done this month. The state of people's minds is made up of all the old events and of new events such as price hikes and the propaganda campaign, which exert some kind of impact on everyone. The division with which everyone has come to terms is still visible: The powerful center, which utters moderate and changeable opinions, and the two more radical wings, one of which is close to the authorities, whereas the other is very adverse to them.

A clear and decisive majority materialized on one score: Almost 66 percent of responders thought that martial law was necessary (more or less 50 percent of these said "yes" and 50 percent said "tend to agree"). However, the evaluation of the political processes in 1980-1986 was far from being crystal clear. For example, very different responses were received to questions such as: "Has the share of workers and peasants in government increased since the suspension of martial law? Has the people's support for party resolutions and activities increased?"

Responders listed the following as favorable features: economic stabilization and economic reform (27 percent); political stabilization and abolition of martial law (22 percent); and improvements in material conditions (19 percent). Almost 11 percent of responders were not aware of any favorable

features. The following were listed as unfavorable features: economic crisis, production slumps, and inflation (40 percent); deteriorated relations with the West and U.S. sanctions (23 percent); and difficult material conditions and low living standards (19 percent).

Some 13.5 percent of responders answered "yes" to the question whether Poland is now a democratic state and over 43 percent answered this question with "tend to agree, although certain restrictions on democracy are still there." This means that almost 57 percent of responders answered this question positively. Over 23 percent answered it with "tend to disagree, although there is democracy in certain spheres" and 12 percent answered it with "no".

In answer to the question about the changes within the PZPR in the eighties, a little over 6 percent said: "Yes, there have been radical changes for the better", over 33 percent said: "Yes, there have been some changes for the better", and almost 36 percent saw no changes.

This means that considerable differences of views or rather layers of views still exist, that there are still many views of negative import for the party, and that negative answers, which are sociologically important, are large in number. They are: I do not know, I have no opinion. As much as 35 percent of responders had no opinion of the party organizations in their own plants.

The conclusion of the Krakow paper is as follow: About one-fifth of responders declare their great trust in the PZPR Central Committee. They include mainly party members, inhabitants of small townships and villages, people possessing vocational and primary education, and people over 40. The influence of the environment in the case of these responders was not too great. Responders that include most young people, inhabitants of large cities, and university graduates are of a different opinion. "The most numerous group of answers indicates that people 'more or less trust' the party, which probably depends on current evaluations of party work. The increased interest in what the party does has been quite clear in the past few years. This public interest has not always produced conclusions that are advantageous and favorable to the party. The polls carried out among party members indicate that generally they are aware of this fact."

I have selected only some data. The report is quite extensive, and what I have selected from it is not tendentious. Taking into account the starting point, we can view the results of the poll with some optimism. But we cannot be as optimistic with regard to the expectations and aspirations of the people. What is important is that the evaluation of social moods and of the state of social awareness is sober.

The following are the responses to the question about factors that cause Poles to be anxious and restless:

Bad upbringing of the young generation and attitudes of "to possess" and "to take"--42.5 percent; laziness and poor work discipline--37.7 percent; increasing debts and lack of prospects to repay them--26.9 percent; increasing social ills such as alcoholism, drug addiction, and crime--25.9 percent;

erroneous and rash decisions by the government--25.7 percent; reduced production of goods and poor supplies--19.3 percent; growing technological backwardness--18.6 percent; bad person-to-person relations--18.3 percent; desertion of religion and the church--14.9 percent; disregard for views and problems of citizens--14.1 percent; reverting to anonymous political decisions and neglecting self-government bodies--12 percent; injustice and growing social divisions--10.9 percent; abandoning economic reform--9.5 percent; lacking accord, dialogue, and opposition activity--7.5 percent; and lacking patriotism and disregarding traditions and history--7 percent.

The following are the responses to the question about factors that cause Poles to be hopeful for the future:

Good, dedicated, and honest performance by all Poles--47.3 percent; wise and competent decisions made by the government and government agencies--31.3 percent; national accord among all Poles and social peace--28.7 percent; social justice and equal rights for all citizens--22.5 percent; solicitude for people's conditions and problems--22.3 percent; attachment to religion and the church--20.5 percent; modernization of the economy and exploitation of scientific and technological achievements--19.4 percent; good person-to-person relations--18.1 percent; increased production of consumer goods and availability of any goods at all--16 percent; solicitude for the young generations' upbringing and education--12.7 percent; repayment of debts and successes in exports--12.2 percent; respect for traditions, culture, history, and patriotism--10.7 percent; better "moral health" and drops in alcoholism and crime--10.1 percent; implementation and positive results of economic reform--9.1 percent; and openness of political life and a growing role of self-government bodies--7.4 percent.

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## PRESENCE OF GERMAN MINORITY DENIED

AU181558 Warsaw RZECZYWISTOSC in Polish 29 Jun 86 p 2

[Commentary by Jerzy Pardus: "The Supposed German Minority"]

[Text] National minorities still continue to be a topical issue of many countries' domestic and foreign policies. The existence of a large group of national minorities in pre-war Poland was a reason why foreign forces continued to interfere in the young Polish state's affairs. What is best known in this connection is the Versailles obligations Poland had to honor and the German minority's activities, which because of their hostile nature were forever called "fifth column" activities, although only some 500,000 Germans lived in Poland in 1939.

World War II made great changes in Poland's national composition, and about 2 million Poles were forced to accept German citizenship during that war. There were also population shifts in the course of it from West to East and vice versa. Of the 8.5 million Germans living in Poland's western territories, several million escaped to the West during the war, not counting those drafted for military service. As a result, when in 1945 we retook possession of these territories, we found in them 3.7 million inhabitants, including 1.2 million native Poles and just over 2.5 million Germans. Immediately after 9 May 1945, some 500,000 Germans left Poland even before the Potsdam decisions.

Following the Potsdam accord and the decision of the Allies Control Commission of 20 November 1945 on removing the Germans from Poland, Czechoslovakia, Hungary, and Austria, between February 1946 and April 1950 some 2.3 million Germans left Poland. About 250,000 of them left in 1956-1959 to join families in the West, about 210,000 left for the two German states, primarily for the FRG, in 1960-1975, and finally 150,000 left in 1976-1980 to join their families in the West or for other reasons. This shows that not only all the Germans have left Poland, but also a large number of native Poles who claimed to be Polish before World War II, but who were discouraged by postwar conditions or were unable to adjust to them.

In view of this, the assertions made by responsible West German politicians, and not only by "regular" revisionists, that there are still 1 million Germans in Poland sound like fairy tales told by Goebbels. We really do not know why

these politicians demand, for example, that we should organize German schools, church masses, and so on.

This is what Cardinal Gulbinowicz, the metropolitan bishop of Wroclaw, said on this subject:

"It is worth noting that the German traditions of the Wroclaw church were taken West by the German inhabitants, of whom very few are still here. For example, not so long ago we tried to establish, for obvious reasons, how many Catholics professing to be Germans still live in our diocese. We found about 1,000 such Catholics, of whom only about 50 percent still attend regularly the holy masses on Sundays in the four centers of our diocese--Wroclaw, Walbrzych, Swidnica, and Klodzk--in which pastoral services in German are provided. As an example: between 90 and 120 persons attend the Wroclaw holy masses in German on Sundays, but our priest in Walbrzych is greatly impressed if his German mass is attended by about 50 persons. It is interesting that for the past 10 years there have been neither christenings nor weddings among our German Catholics, which means that they are elderly people.

"As for the Warmia territory, where I worked in 1959-1970, I noticed the greater differences than in Silesia. There were two groups of people there: native Catholics and native Protestants. There are Protestants in Lower Silesia, but their number is low--some 5,000 people--whereas they accounted for 70 percent of Wroclaw's inhabitants before World War II." (from WIEZ, issue 10-11-12 1985)

We can assume that Cardinal Gulbinowicz's statement can be regarded as an indirect answer to the German Catholics' statements on this subject.

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## USE OF WARTIME BUNKERS AS NUCLEAR WASTE DUMPS PROTESTED

Vienna PROFIL in German No 27, 30 Jun 86 pp 40-41

[Article by Gerhard Rohner<sup>1</sup>: "Nuclear Waste Versus Bats"]

[Text] Bats are still living in the old Wehrmacht bunker. Where Hitler once intended to put underground armament factories, highly radioactive waste may soon be dumped. The old Nazi fortress in the small west Polish town of Miedzyrzecz has been selected as the final depot for Polish and foreign nuclear waste.

On the Baltic Sea coast near Gdansk, excavation work for the first Polish nuclear power plant was begun: in Zarnowiec, as of 1990, 4 reactor blocks are to generate 440 megawatts of electricity each. The reactor type is the same as the one also sold by the Soviets to the CSSR, Hungary, and Finland: the "Woronesh" pressurized water reactor WWR 440.

But after the worst conceivable accident of Chernobyl, nuclear fear moved into Poland, together with the radioactive cloud. The Polish government, which at first downplayed the accident in the brother country, meanwhile had its nuclear energy plans examined by a commission. Last week, they at least announced "changes" in the construction of the nuclear power plant. The public was not informed whether this concerns belatedly equipping the reactor with a containment, or with an emergency cooling system.

Polish media reported the occurrence in Chernobyl with a delay of several days. Next to a story on a Boy Scout meeting was concealed this terse report: "Accident in a nuclear power plant near Kiev--two dead." At that time, the "cloud of friendship," as underground newspapers joked, had long passed over Poland. Geiger counters in the vicinity of the east Polish town of Bialystok indicated up to 3 millirem per hour, i.e., 30 times the amount found in Austria's hardest-hit regions.

People were not about to believe the appeasing statements of Polish government spokesman Jerzy Urban, whose author's pseudonym of Jan Rem

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<sup>1</sup> Pseudonym of an Austrian author now living in Poland

caused instant hilarity. They learned the true extent of the catastrophe from Polish language programs of foreign radio stations such as "Radio Free Europe," disparaged by the regime as an agitator CIA station.

The demand for uncontaminated food rose immediately. Fresh butter stayed in the refrigerated cases, older, frozen butter was sold out within hours. Milk was boycotted, despite official assurances of its complete safety. About 40,000 liters supposedly went sour in a single day in the stores in Poznan. Consumption of milk powder exhausted all supplies. Only on the free market, where foodstuffs are sold privately at inflated prices, powdered milk was still available at five times the regular price: for 500 zlotys.

But vegetables were suddenly available at much cheaper prices. Functionaries appeared on television, eating lettuce and assuring [everyone] smilingly that they still had all their hair on their heads.

In small doses, politicians admitted the truth about the Soviet nuclear accident. [They said] that Polish experts were already at work with the "absolutely most excellent" (najwybitniejsze) Soviet colleagues in order to confine the damage.

In the most heavily radiated regions of eastern Poland, "Lugol" was distributed to children, an iodine solution which is to prevent the absorption of radioactive iodine. Long lines of worried mothers formed in front of official health offices. Often the desired liquid ran out, and those who had come too late broke into tears.

Background reports on the consequences of radioactivity appeared only in the underground press. Television only spoke of a "tenfold increase" in the stress, but soon talked about a drop to "normal levels." Of course, absolute figures were not mentioned.

Rumors thrived all the more: in east Poland, hundreds of radiation victims were supposedly taken to hospitals. KP functionaries allegedly had received double rations of "Lugol" for their children. And Polish racing cyclists willing to participate in the "peace tour" to Kiev despite the accident, were to be presented with a small Polski-Fiat.

The general apathy in Poland soon supplanted the first panic. While Austrian children were kept from touching sand or grass, such appropriate advice was lacking in the Polish media. Even doctors' children could be seen playing happily in sandboxes.

The import prohibition for foodstuffs from the East bloc hit Polish exporters hard. In May, the resultant damage is supposed to have been more than \$40 million. Considering the shortage of foreign currency, a severe blow to the Polish budget, since further export losses can be expected.

The hope of many Poles, that now more meat would get into the stores, remained unfulfilled. Housewives noticed very little in the way of greater variety in the butcher shops.

Mothers above all assembled in spontaneous anti-nuclear protests. In Wroclaw and Cracow the demonstrators demanded more information on the consequences of radioactivity. One sign read, "Today Chernobyl, tomorrow Zarnowiec;" another said: "Down with Soviet contamination." In Mialystok, 3,000 people signed a petition to the Polish parliament to postpone construction of the first nuclear power plant in Zarnowiec.

Government spokesman Jerzy Urban stressed, on the other hand, that Poland would stick to the development of nuclear energy. It is planned to have 8,000 megawatts from nuclear power plants by the year 2000. This corresponds to the capacity of 10 Zwentendorf reactors.

In addition to the nuclear power plant in Zarnowiec, a second one is planned for Klempicz, 50 km north of Poznan.

Most controversial is the nuclear waste depot in the west Polish town of Miedzyrzecz. Hitler had the kilometers-long bunker installations built for underground armament factories. Now nuclear waste is to go in there. According to rumors, soon Western nuclear waste might be permanently stored there, for dollars, 70 kilometers from the GDR border and 200 kilometers from Berlin.

Some initial resistance against the project is mounting among the locals. For it, the anti-nuclear people utilize the protection of official organizations such as the "Patriotic Front," PRON, and the Polish Society for Tourism, PTTK. In return, the Ministry of Mining and Energy organized local discussion sessions in order to "enlighten" the population. But the experts sent by the government behaved so arrogantly vis-a-vis the rural population that protests by the neighboring farmers grew even stronger. Geologists from the surrounding area, who submitted initial studies of the nuclear dung heap, were told to keep silent.

The opponents of nuclear waste organize excursions to the Nazi bunkers and collect signatures. In addition to the general dangers of a final depot, they point to cracks in the bunker, which could contaminate the ground water. Animal lovers stress the value of the bunker as a preserve for bats, unique in Europe.

There are hardly any protests against the two planned nuclear power plants. Polish environmentalists evidently are fully occupied with water pollution and dying forests in south Poland. Yet after Chernobyl, a nuclear discussion started, and not only in the underground press.

Of all places, an article appeared in the Catholic weekly, TYGODNIK POWSZECHNY, by two physics professors who considered nuclear energy indispensable for Poland, although with safety requirements. Robert



Jungk's book, "Atomstaat" [Nuclear State], was reviled by the scientists as a "lampoon of science, politics and morals of our time."

The two nuclear fans did not even think to concern themselves with the possibility of saving energy. For the enormous waste of energy is still a problem in Poland. Heat conservation of houses is still miserable, windows have leaks as wide as a finger. There is no insulation. Thermostats are largely unknown. Polish cars use much too much gasoline. Energy consumption in factories plays practically no part in production costs.

At the party congress of the Polish KP, beginning in Warsaw this week, Chernobyl and nuclear power could be a marginal subject. But from the guest of honor, Mikhail Gorbachev, Polish comrades cannot expect compensation for the damages caused by radioactive precipitation; Poland's party chief, Wojciech Jaruzelski, on the other hand, can expect praise for the suppression of Solidarnosc, whose underground leader, Zbigniew Bujak, was arrested only a month ago. Embarrassingly enough, in the apartment of a high official of the Ministry of Foreign Affairs.

On the occasion of the party congress, underground newspapers printed anti-nuclear jokes. "What is the purpose of a Geiger counter?" "To measure the friendship between Poland and the Soviet Union."

[Caption of photograph] Anti-nuclear protest in Cracow: "Down with Soviet contamination."

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CSO: 2300/445

## WEEKLY AGAINST BAN ON POPPY CULTIVATION

AU141207 Warsaw RZECZYWISTOSC in Polish 22 Jun 86 p 8

[Article by Lech Warecki: "Misleading by Means of the Poppy"]

[Excerpts] On 30 May 1986, ZYCIE ZDUNSKIEJ WOLI (ZDUNSKA KWOLA LIFE) published the following appeal by nine pedagogues from the Zdunska Kwola educational advisory body:

"We are solidarity with the work MONAR managed by Marek Kotanski. We support the activity under the slogan of "The Marathon of Hope", the aim of which is to liquidate and ban poppy cultivation in Poland. We appeal to Sieradz Voivoda Kazimierz Ciapka to ban this cultivation in Sieradz Voivodship."

Reading this "appeal" I did not know whether I was crying or galing. I just could not believe that such words originated from educated people and specialists in upbringing! It is terrifying that these "specialists" see the reasons for various social ills in the poppy and not in the system of education.

Very soon they will appeal to their voivoda and perhaps even the premier to liquidate the cultivation of potatoes, rye, sugar beets, and apples because they can be used to produce moonshine, and we all know that mass alcoholism is a much grimmer phenomenon than drug addiction, which is almost nonexistent in Sieradz Voivodship.

I also keep wondering why these pedagogues who appeal for a ban on poppy cultivation have still not appealed to, say, TYGODNIK POWSZECHNY not to propagate the rock bands whose members are drug addicts, or to weeklies that publish texts that encourage youngsters and children to drink vodka?

For a long time now the West has been waging an information war against the East for the purpose of delaying the economic development of the countries of our bloc as well as the intellectual and moral development of their societies. As we can see there are enough naive people among Poles who let themselves be taken in by subversive slogans and who themselves propagate these slogans in the sacred conviction that they are thus able to be of good service to Poland. However, there are also those among us who promote these slogans in a premeditated way because they know who benefits by them!

I cannot help having the harassing impression that, appealing--no doubt for noble reasons--for a ban on poppy cultivation in Poland, Mr Kotanski continues to mislead us all!

## BRIEFS

**SOCIAL-DEMOCRAT WEHNER HONORED**--The 80th birthday of Herbert Wehner, a prominent figure in the postwar social-democratic movement, was celebrated in Becklinghausen today with the participation of the whole leadership of the West German Social-Democrats, with the exception of Willy Brandt, the leader of the party, who is abroad, as well as with the participation of several hundred invited celebrities. A message from Wojciech Jaruzelski, in which Herbert Wehner's special contribution to the process of normalization of relations between Poland and the FRG was recalled, was read during the ceremony. A measure of universal respect and appreciation for this politician in the country and the Rhine who has been in retirement for some years, is the fact that among the leading people conveying congratulations were also his greatest political opponents from the Christian-Democratic movement. Herbert Wehner is still working for closer relations with Poland, which has been manifested by his idea to set up a foundation named after him, which would conduct scientific research concerning contacts between the FRG and Poland.  
[Text] [Warsaw Television Service in Polish 1800 GMT 11 Jul 86] /9871

**FRENCH DELEGATION VISITS POLAND**--The delegation of the French-Polish friendship group in the Senate of the French Republic, headed by Senator Maurice Schuman, which is at present staying in Poland, paid a visit to the Ministry of Foreign Affairs where a conversation was held with Deputy Minister Tadeusz Giechowcki. The main subject of the talks was the state of and the prospects for Polish-French relations and especially cooperation in the economic, cultural, and scientific fields and other forms of contact such as cooperation between towns, youth exchanges, and tourism. The participants expressed the desire to improve and develop bilateral relations.  
[Text] [Warsaw Domestic Service in Polish 1400 GMT 11 Jul 86] /9871

CSII: 2600/564

## RIBICIC DISCUSSES CHANGING TIMES, VIEWS, CRISIS

Zagreb DANAS in Serbo-Croatian 24 Jul 86 pp 19-22

[Interview with Mitja Ribicic by Mirko Galic and Djuro Zagorac: "New Answers Here and Now"; date and place not given]

[Text] DANAS: During the past 4 years you have been at the top of the Yugoslav party. During the first year of the last term, following the 12th congress, you held the position of chairman of the Presidium of the LCY Central Committee. How do you evaluate this time, what would you single out of that period, which you certainly will remember for a long time because of the difficulties and the crisis society has fallen into, as the dominant feature?

Ribicic: We usually say that this is one of the most difficult periods in the present-day history of the League of Communists of Yugoslavia. There are many reasons for saying so. But we should be fair here, we must not exaggerate the severity of the present situation. There have been more difficult periods, above all during the war and revolution, when we were disarmed, but we had to fight armies which were on our soil. We must not underestimate the period of interventionism, Western and Eastern, from 1945, immediately after the war, all the way up to 1953, up to Stalin's death, and indeed even later, right up until the Belgrade and Moscow declaration. At that time we were defending nothing more nor less than the right of our revolution to survive, to have its own features, we were opposing spheres of interest in the Balkans. At that time it was to be or not to be. After that we constantly faced challenges, since they were imposed by the times, or we went looking for them, seeking our own new and better solutions. At the 6th congress we transformed the party into the League of Communists, at the 7th we adopted the new Program, and at all congresses since then we have always been restless, we have been looking for our own road of socialist self-management and self-management democracy. In this period of construction the eighties are certainly the most difficult we have experienced so far. After all, we have fallen into a crisis, first of all an economic crisis, with many elements of a social, political, and moral crisis.

DANAS: You say that it was more difficult in the period 1941-1945 and in the period 1948-1953. Then freedom and independence were at issue. Does the present crisis threaten such fundamental values?

Ribicic: No, that could not be said. I think that revolutionary values and freedom and independence are dominant above all else in the consciousness of our people, in their convictions. No one, not even the fiercest critics (I do not include enemies) would question such achievements of the revolution and socialism. The debate of the proposal of conclusions of the 13th Meeting of the LCY Central Committee was perhaps the culmination of the criticism, but it offered the best demonstration of the extent to which people favor self-management, brotherhood and unity, and the authority of work and knowledge. Members of the party and our other citizens have been criticizing both the LC and the political leadership because they were demanding more socialist self-management, not because they were against it. They have been demanding more effectiveness and more responsibility, they have been demanding consistency, knowledge, and competence. Previously we had a leadership with great authority, with Tito, Kardelj, Bakaric, Milentije Popovic, Veljko Vlahovic, Mosa Pijade, Boris Kidric, with the generation that carried out the revolution and offered the vision of a development of socialism. The present leadership must fight for its authority, must win confidence if there is to be further progress along Tito's road. The present generations face new challenges; they must find the answers to them. It is in that way that they will build up their authority.

Great changes have taken place in the world, in science, technology, and in the workplace over the last 10 years or so. A new balance of power has been created, not only political, but also technological, above all technological. The new situation demands new answers. I see this as the opportunity for those who are coming along to establish themselves, to win authority. You know, no one presented authority to us as a gift either, we waged a struggle and we won it. We had our revolution, and the new generations face our revolution, which needs to be continued, but also another revolution, i.e., the scientific-technological revolution. It has to be accepted and carried out.

DANAS: Many people think that our crisis in fact occurred in part because we did not provide timely answers to the questions of modern development of the economy, science, and society as a whole.

Ribicic: I agree, our science, social and technical, has not been adapted to rapid changes. Neither the League of Communists nor the political forces of a self-managed society have been up with the times. We have not had the answers which the times were demanding, and we kept repeating: "Comrade Tito, we swear to you that we will not go astray from your path." I do not think that we should forget or neglect Tito's path, but we need to go on building it without turning away from it. We have failed to see the new section of road, and we have gone back to the past looking for answers there. That is where the strategic answers are to be found, but not the specific responses to the new and present-day challenges.

DANAS: There is yet another explanation for the occurrence of the crisis (in addition to the lagging behind changes), and it has to do with our having atomized the country excessively, both economically and politically, and with that being the reason why the reaction was late to events in the world, to the immense changes in technology, in science.



Ribicic: I could agree with that provided it is not stated so generally. After all, there have been strong efforts in the League of Communists to respond to those questions, for us to organize ourselves differently. But we did not do this in time, we did not adapt the structure of our economy in good time to the world economy, we have not been changing the organization of work. We have to accept that criticism of ourselves. However, in the recent past people have become aware that there is no future without those responses. I cannot even say that we have found all the answers, nor the best answers. We are going to the congress with certain solutions, and later, in the course of practice, they will be supplemented and improved. We have, then, new proposals, new ideas. We have realized that we can no longer go on living off the capital of the revolution and the victories of the past. We have woven them into the system of self-management, into the constitution, now we have to look for modern answers to what is imposed upon us here and now.

We have the Long-Range Economic Stabilization Program: We wrote down in it everything we knew. Many answers have been provided in it, both with respect to the causes of the economic crisis and with respect to the directions for resolving it. The autarkic extensive economy has been subjected to unsparing criticism, we need open modern mechanisms and a new division of labor. We have the Critical Analysis of the Political System: I will not idealize by saying that we have offered the best answers to all questions in it, but it does look for answers on how we should organize the Federation. Let me say straight off that I do not think that we should undertake to organize some "third Yugoslavia," following AVNOJ and the 1974 Constitution. We need an effective Federation which will organize our life in common, and it should be along the lines of AVNOJ and on the foundations of the constitutional system that exists in the country. But those who talk about a "third Yugoslavia" do not acknowledge any achievement of AVNOJ, any achievement of the struggle waged in the period 1941-1945. Those achievements are unavoidable as foundations of a strategy, of Tito's strategy, which needs to be further elaborated and plotted. In this we need to be bold.

DANAS: Quite often you have come forth with ideas that had a fresh impact and which at times were different. Recently you have withdrawn. Did you get tired, or were you ahead of your time?

Ribicic: The building of new relations, both in the economy and in politics, and also in the democratization of life, has not been without conflicts. I do not think that I have been right about everything I have said. Each of us has been trying to make a contribution to our course, and it is possible that at times we have turned out to be like the cock that crowed early in the Montenegrin village, so that the entire village was for eating him because he was a disturbance and robbing people of their sleep. So at times some of my statements may have been a bit early, and the public did not understand them. But I was not dropped from the lists of candidates for that reason, neither closed nor open, nor have I been fatigued. I am deeply convinced--I said this 9 months ago to the personnel commission in Slovenia, that old revolutionaries should after two, three, four, five, or six terms of office turn their places over to young people who know more than we do. I am withdrawing peacefully. I can no longer go into a work organization. I cannot work physically, I am

going into my own local community. I do not need to be in the Council of the Federation, it is enough for me to be a member of the council of the local community.

DANAS: By your example you are illustrating a broader social tendency--personnel renewal in the LC and in society, which in some places has been carried out by the method of open lists of candidates, and in other places with closed ones. What is your view of that?

Ribicic: Open lists of candidates are the future. I am certain of that. But open lists from the very bottom to the top. I said that at the Croatian Congress, and perhaps I was taken wrongly, as though I were criticizing open lists. Nor did I have enough information at that time to be able to say that at all. There is one thing I would like to point out: The problem of personnel should not be posed exclusively in terms of age groups, but rather it should be posed as a question of knowledge, ability, and commitment. I would also add determination, since political work is very difficult, I can say this from abundant personal experience. I am withdrawing, some of my comrades of the same age are running for the new Central Committee. I am not criticizing them for that. It is a good thing for there to be three generations in the leadership, one with the greatest experience which is living off past labor, a second which is the most fruitful both biologically and intellectually, and a third which is the youngest and which is still learning. What bothers me in personnel policy is that everyone is fighting to get into the places where decisions are made, in the party particularly, and we underestimate work in the leadership of the Socialist Alliance, the trade unions, the youth organization, the veterans' organization.... It seems to me that this indicates to us that the party is still a government party and its activity is still top-heavy. We in the Presidency held 169 meetings in 4 years, we met every Tuesday, often from 0900 hours until 2100 hours. We held 40-50 meetings more than in the days when there were politburos. This shows that the party has taken too many things upon itself.

DANAS: The Socialist Alliance might take over some of the load, provided only that things are not done and said in it in the same way.

Ribicic: Our dominant method is that of the transition belt, it is paralyzing the work of the Front. Decisions in our country are not made in delegate assemblies, decisions are made in collusion between the executive and professional bodies. We have to move decisionmaking to the assemblies, then the broad delegate base in the Socialist Alliance will become active. If you look at the way the Federal Executive Council is structured, you will see that the three main federal secretaries--for defense, for internal affairs, and for foreign affairs--are related rather to the SFRY State Presidency than to the Assembly. It is only the strategic importance of those areas that justifies their being related to the State Presidency. But their regular work should depend on the Assembly. Let me give you the example of Japan: Japan would have never established itself as a world force in exporting and on the world market if the Japanese economy had not had its long arm in foreign policy, in diplomatic missions and trade missions. But in our foreign policy statements are in general terms, and the country is in a deep economic crisis.

DANAS: You yourself have said that there has been a decline in the authority of the LC in recent years, partly because the bill for the crisis has been presented to the party, whether it was responsible for it or not, and in part because it has not provided a program and organized an effort to get out of the crisis. How is its authority, both moral and political, to be restored?

Ribicic: I was the first chairman after the 12th congress. I would not want that kind of situation to recur following the 13th congress. That is, the situation we had was just like the situation of the youth organization a few days ago after its congress: The congress ended in fine shape, the platform was adopted, but the Central Committee could not elect a leadership. This happened in the first meeting of the LCY Central Committee following the 12th congress: The situation was dramatic, but a way out was found. A bit later we adopted conclusions which it seems to me we have been forgetting without giving much thought to it. That is a very important document, but it has gotten lost in the forest of other papers. It should be recalled, since it points to the situation which the LC has to overcome once and for all, since it has to do with the internal struggle, with conflicts, with the lack of confidence that has built up over the years, in my opinion because of the statist logic and the statist approach to problems. As chairman, together with Nikola Stojanovic, who was secretary, and the other members of the Presidium, I had to do a great deal of work for us to reestablish the confidence that was indispensable to successful work. It is a normal thing for us to have different opinions on certain issues; the problem is whether we overcome them in a civilized and democratic way or point them up to a ridiculous degree.

DANAS: Do you think something like that could happen in the elections at the congress?

Ribicic: I do not think so. I think that the lists of candidates of the republics and provinces will be confirmed even though this requires a two-thirds rather than an ordinary majority. Incidentally, all the candidates have already passed through the preliminary debate in the republics and provinces. The congress has an elective role; however, by and large everything in that respect is cleared up before the congress with respect to electing the leadership of Yugoslavia. It is a good thing, in my opinion, for the congress to confirm the Central Committee as the elected Yugoslav leadership. After all, it is accountable to the congress, just as it is accountable to the republics and provinces. For me this is a good sign on the eve of the 13th congress.

DANAS: Many people saw the election of a new government as a good sign, one which at the very outset received greater support than the previous one.

Ribicic: The new government has indeed received great support. The rest in large part depends on it. It must above all show great courage, it must persist, even at the price of resigning. I am convinced that the congress will confirm a courageous and consistent economic policy even to the point of crossing off any expenditure for which there is no coverage. Without exceptions. We must realize that a single exception in the Federation results in 8 exceptions in the country as a whole, 600 exceptions in the opstinas, and several thousand chain reactions.

DANAS: Is that possible under our conditions today?

Ribicic: I think that it is, since people have become well aware that no one can develop any longer on his own. We have come to the extreme limits of the disintegrated state of our economy. Work can no longer be done this way, and I assume that we have all become aware of this. Slovenia cannot have its separate energy budget, Serbia its own, and so on; there has to be Yugoslavia's energy budget. I believe that we are all aware of that, that we are aware that economic inroads have to be made by Yugoslavia, not by the individual parts. I know that extremes still exist, people for whom the government must resolve everything, must abolish economic laws, and others who look at the economy through liberalistic and group-ownership spectacles, who do not acknowledge any role on the part of the government. I believe that the congress will give support to Mikulic and the delegate assembly to manage the economy on the platform of the Long-Range Program. And second, I expect that on the basis of the Critical Analysis...the congress will confirm the direction of the political changes, will make adjustments where there are allergic points in the system. Up to now we have been discussing the political system; following the congress we have to build it and change it. It is high time changes are made, and for me this is an impressive victory, since the changes are to be carried out along the road of self-management democracy, not in opposition to it. In fact, no sort of other changes are even possible.

DANAS: You have often spoken about an opposition. What has been happening with it?

Ribicic: I think that it has exhausted its capabilities. To be sure, it has taken up certain positions around certain magazines or other outlets, but it cannot offer alternatives or any antimodel to our program. All it can do is to swear and to spit, but it needs more than that to gain respect with the public. With its criticism of the entire status quo it is actually instilling fear that we are going back to what used to be in the Balkans, those quarrels and hatreds and divisions, backwardness and evil. Even at the congress there will probably be marginal discussions about that, but it will not be important, since the basic orientation is clear.

DANAS: You anticipate a more favorable situation and better results following the 13th congress. What are the guarantees, say, that the Long-Range Program will now be better received when we know that 4 years have gone by without any sort of results in carrying it out?

Ribicic: We Yugoslavs are people that sometimes need to be hit on the head to become aware of things. I think that the crisis has already dealt us too many blows for us to go on in the same old way. There is no longer any room to breathe; taking a breather would be very hazardous. I am for dramatizing the situation to the fullest, short only of the point of creating a feeling of hopelessness and apathy. We have to enlist forces. It would be dangerous for someone to say that we have rescheduled our debt, we have relief in connection with interest rates and the prices of oil, and so on, so that we should go on spending as we have up to now, we should go on doing what we have up to now, we should socialize losses, and solve the problems of the economy through



compromises. In that case we would create the conditions for a still more serious crisis. We have come to the end, we cannot go on this way any longer.

DANAS: Certain issues have been cleared up in relations among the republics and provinces, but there have also been tensions. Has everything been said? Are there still taboo topics in this area?

Ribicic: I would not say that there are taboo topics. There is a great deal said about everything, indeed to the point, say, where Slovenia when it criticizes the Federation must also speak about itself, about its place, about its advantages, and about its shortcomings. For example, the armed forces are highly sensitive if anyone says something about changing the period of military service, about the method of drafting recruits. They should not be so sensitive. We should look at what the situation is and what should be done. After all, the armed forces are also a social organization, and they must live their life within their community, and they must change just as the community must change. What was valid in 1945 need not be valid in 1985. All armed forces in the world have been changing in this regard and adapting to changes. I am in favor of very harsh criticism of unitarianism and the centralistic approach of state socialism in the Federation, and in the republics there should be harsh criticism of nationalism and separatism, of the anti-Yugoslav approach. The way the situation is now, separatism is criticized in the Federation, and unitarianism in the republics. An artificial fog is created in which both the separatists and the unitarists get along fine, and the self-managers and associated labor and our working class, which does not understand our skirmishing, fair badly. As far as I am concerned the armed forces are a centralist organization, they have and should have a common core so that they can organize effective defense. Since in a case of war we would wage a national liberation war, and the armed forces would conduct a broad policy of reliance on all this country's patriots, we need also to develop a feeling for the problems and sensibilities of all the nationalities and ethnic minorities in that context, and that means a feeling for culture, languages, and religion. Our youth is not homogeneous, I know of a survey to that effect, and this should be respected, everywhere and in all respects.

DANAS: The nationality question has again been posed in our political life, nationalisms have been on the rise, tensions have grown, and so on. How do you evaluate the situation with respect to interethnic relations?

Ribicic: We are still living in a process of national emancipation, not merely class and social emancipation. I do not agree that we should speak only in terms of classes and not say that the working class is also responsible for development of the nationalities, that it is the hegemon within the nationality.

DANAS: But precisely in the years we have been speaking of there have been deviations, and the political bureaucracy has become the hegemon both in the class and in the nationality.

Ribicic: Great changes, you see, have taken place both in the nationality and in the class. The working class is no longer confined to physical work, the



technical intelligentsia and mental intelligentsia have grown up. There have also been great changes in the nationality. The nationality is no longer affirmed solely through folklore, through songs and costumes. The interest of the nationality is affirmed at a higher level and in many other ways. A new quality has come about in the relationship between the nationality aspect and the class aspect. We have to take this into account.

DANAS: The growth of statism and bureaucracy is a threat both in class terms and in ethnic terms.

Ribicic: That is the basic problem: statism. At the Croatian Congress I used a saying of Mayakovsky; I compared the bureaucracy to a wolf. Some of the delegates, so I hear, were critical of me for it. Statism is not the model for resolving the nationality question. We do not deny the right of the Palestinians to self-determination, to a state. They do not have a state, their proletariat, as Marx would have said, does not have a homeland. Our proletariat has a homeland, it is the force of the homeland. Which makes its responsibility for the nationality question all the greater. In our context self-management means self-determination, a way of linking the nationalities together and affirming them that is common to the entire community. I say self-management, not statism. But a great deal of this in interethnic relations we have reduced to statism. The government must be there to serve self-management; the professional agencies must be there to serve self-management, not the other way around.

DANAS: Are you afraid for the future of interethnic relations as many people today are afraid, frightened by the scale of the conflict and antagonisms which have come to the surface?

Ribicic: The basic thing is for us to get out of the crisis as soon as possible, for us to achieve a sound growth of production, external and internal liquidity, for us to begin to create jobs for people, to open up a future, for us to respect ecological problems. When we stabilize the economy, relations in what we might call the superstructure will also undergo change. We will resort to the government for help less frequently, and we will also do less swearing, the Croat won't tend to blame the Slovene so often, and the Slovene the Serb, and the Slovenes, Montenegrins, or Macedonians will make less noise about their interests being neglected, and they will not neglect the interests of others as frequently. Nationalism is like rust: unless you scrape it well, it is not enough to paint it over. You need to renew the entire house, not just put another coat of paint on the walls.

DANAS: Comrade Ribicic, you are the author of a slogan which has been exploited a great deal both pro and con. You said: "A book for a book." To what extent has that thesis been confirmed? And do you still take that view?

Ribicic: I said a book for a book, not a book for a pamphlet or a book for hostile activity. If someone has written some book which the reviewers have praised, it should be answered with a book, at least insofar as it does not altogether coincide with our current views. Do you know why I said that in the first place? I said that in a phase when there was a dangerous rise of

the mentality that we could solve these problems merely with administrative measures and anathemas. I am not in favor of the party acting as a censor. And we had begun to make an issue of theater productions, of films, and almost with aphorisms and poems as though Yugoslavia would fall to pieces on that account. In actuality it was a success on the part of the tactics of enemies to draw us into that business, and this went in their favor. After all, hostile forces want nothing better than for us to recognize them as opponents. None of them is going to join the Socialist Alliance and present their conception to the people in that organization or go into a factory and tell the workers what he wants. They would run him out. They find outlets where they can be heard, and those outlets actually belong to those who think like them. And when in addition the party "recognizes" them by virtue of its responding to them with a ban or by reacting administratively to their statements, their stock goes up. Why do we have to do it that way? In 1968 Vlahovic and Minic went among the dissatisfied university students. Ito made a historic assessment of the justified reaction of the students, criticizing the oversimplified solutions which were proposed. And he won them over; today many of them hold responsible positions. But it is more difficult to confront things in this way than to ban them. That was my motivation in saying "A book for a book." This does not mean that you will answer someone with a book when he has broken the law, when he has engaged in hostile activity. I would not even be afraid if we gave our lawyers who are really oriented toward socialist self-management, there are among them some lawyers who were in the Partizans, the job of making corrections in the Criminal Code so that matters would be clearer, so that we do not end up prosecuting people for what they think. Tolstoy said that thought is freedom's last retreat because thoughts cannot be read. It would not be a good thing if it turned out that socialism was a society which fought against the freedom of thought. The Criminal Code should include what is essential, and that is fascism, chauvinism, enmity among the nationalities, counterrevolution in Kosovo or elsewhere. Those things should be punishable.

DANAS: There are significant differences both in the party and in the leadership in views of this problem. Some people say that what you are advocating now is the Social Democratic concept.

Ribicic: Social democracy, you know, is a part of the working class movement. I do not think that the League of Communists, the Socialist Alliance, is taking our society in the direction of social democracy; we are going much further than the Social Democrat, and we are also going further than the Communists who are in power. In the "free world" of the Social Democrats it is prohibited to speak about the liberation of labor; private property is something holy to them. But they have offered certain achievements in social welfare policy, in the system of social services, in human rights. We cannot ignore this, however much this might seem like the position of the Social Democrats to some people. We have to develop human rights, but not in such a way as this to be manipulated, as in the case in the bourgeois societies. Our socialism and socialism in general must be established as a democratic society. Our people are increasingly aware of their democratic rights.

DANAS: Is the party prepared to take up the kind of dialogue you are advocating?

Ribicic: Well, we have already accepted it. Even the Central Committee is not carrying on a monologue anymore; there are some dialogues of no mean proportions going on there. Which is not to mention that there was much criticism of the Central Committee during the debate about the conclusions of the 13th meeting. All of this indicates that a real contest of opinions has begun in our country. I do not think that this process can be stopped. The thing now is to draw syntheses out of that contest of opinions.

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CS0: 2800/308

## DIATRIBE AGAINST FOREIGN STUDENTS IN BELGRADE

Belgrade ILUSTROVAN: POLITIKA in Serbo-Croatian 27 May 86 p 4

[Letter to editor by B. Markovic]

[Text] I am a regular reader and recall a recent article on foreign students in Belgrade.

As the mother of a future student, I am interested in this topic and have come up with some facts, which I will cite in the hope of giving an idea for another article.

If 7,000 foreign students live in Belgrade and if we assume that each spends \$100 on the average for rent and an equal amount for food, transportation, and other needs, the monthly total is \$1.4 million. Do they exchange that money at a bank? I am almost sure not. Private arrangements therefore flourish on a large scale.

I know for sure that students from Arab countries receive money via our banks--not all, of course, but the total is several thousand dollars per individual. The banks pay this out in hard currency (such are the regulations, presumably). Such students are immediately free to exchange money in the black market on the street.

Not all foreign students are from well-to-do families, not all receive hard currency from their relatives. Many get by selling appliances, jeans, drugs (I assume), and who knows what else.

The number of places for Yugoslav students at our faculties is limited, not only by the obligation to demonstrate a certain level of knowledge at an entrance examination but also by enrollment quotas at various faculties. How, then, can there be space for 7,000 foreign students? Because foreigners buy an enrollment card for a substantial sum in hard currency without even being asked about their knowledge? I have heard that enrollment (I am not sure per semester or per year) costs roughly \$1,300, varying from one faculty to another. Such is the cost of enrollment at the DIF (Physical Education Institute) or the Pedagogical Academy on National Front Street. The story goes that barely 10 percent of the students in those establishments are Yugoslavs.

If we assume the average enrollment price to be \$1,000, the faculties are collecting \$7 million from 7,000 students every year. How are the faculties dividing up and using that money?

In my neighborhood, in a suburban settlement, there are quite a few foreign students, the most from Greece and Arab countries. I was curious as to how they are as learners, do they study, do they pass examinations? Believe me, many have not even started! The majority are attending or have finished a course in our language at the institute on Jovanova Street. They attend classes, or they don't. Some of them have passed one examination or another. Individuals do not hide the fact that they have purchased their passed exams. I almost have the impression that they live here because this is cheaper than living in their own countries, where they would not be able to dream of studying at an institution of higher learning, given their level of knowledge and secondary-school grades and probably expenses.

Aside from purchased passed exams, passes are probably given as gifts in some instances, presumably because of language difficulties and because of "they're not ours so who cares." Is it not dangerous to spread so many quasispecialists around the world? Isn't this selling the reputation of Belgrade University? Must we sell absolutely everything for miserable hard currency?

The view is widespread that foreign students pay rents to landlords in hard currency. By now, many landlords are tired of the whole business. As a rule, these young people are extremely careless in relation to hygiene and taking care of property. They also know a trick: one student moves in officially, and then many use the same room or apartment. On departure, landlords are stuck with substantial telephone bills. Many attempt to recover via the courts and police.

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## PARTY DAILY CRITICIZES STUDENT 'VOLUNTEER' WORKERS

AU181425 Prague RUDE PRAVO in Czech 16 Jul 86 p 2

[Commentary by Frantisek Mucha: "For the Sake of Attendance?"]

[Text] Volunteer workers from the ranks of our youth are welcome at many construction sites suffering from a shortage of regular permanent staff. They usually come on the initiative of the youth union organization with the aim of fulfilling an adopted pledge--to voluntarily work a set number of hours. Let us assume that they really work the set hours. But is their work always of such value to society as might be inferred from the reports compiled for the supervising agencies?

I have one example at hand that ought to be given serious consideration. The Bratislava Castle Hill project has been declared a youth project. Youth union members from schools, factories, and institutions take turns there to work voluntary shifts at regular intervals. Some of them do their job honestly, but as far as the others are concerned, the builders of the Bratislava Staving firm would prefer not to see them around at all. For example, in April, 122 students of the Mathematics and Physics Department of the Bratislava Comenius University spent on an individual basis between 3 and 15 hours working at the site. Their earnings were in the range of between Kcs9-62. Some of them thus earned hourly wages of only Kcs3(!) Because they were paid by the job, let us have a look at the fulfillment of performance norms. It was between 23 and 48 percent (while the permanent staff fulfilled the norms 106.1 percent.) "Admirable" performance, indeed.

The money earned by the students was transferred by the enterprise to the Solidarity Fund (this was part of the students' pledge). Nominally they thus fulfilled what they had pledged. It is quite possible that they will even be lauded by higher youth union bodies. But what is the benefit of such work? Let us wish that during the summer work activity that is already underway at full swing there will be as few similar cases as possible.

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